Australian Government
National Water Commission

General Manager
Water Markets and Efficiency Group

Ms Wendy Craik
Commissioner
Productivity Commission
Level 2, 15 Moore Street
Canberra City ACT 2600

Dear Ms Wendy Craik

In June 2010 the National Water Commission (NWC) commenced the *Developing future directions for the urban water sector* project. The purpose of the project is to identify the scope for further reforms to help the water sector perform and better manage future risks and challenges. As part of the project the NWC has had recognised experts in the water sector prepare assessment reports. The Productivity Commission has expressed an interest in receiving the assessment reports for consideration in the Productivity Commission's public inquiry into Australia's urban water sector.

Mr James Cox, CEO of the Independent Regulatory and Pricing Tribunal (IPART) New South Wales, prepared the attached paper as an assessment report on the topic area 'pricing and economic reform'. Mr Cox has given his permission for the NWC to forward this paper to the Productivity Commission for inclusion in the public inquiry.

Yours sincerely

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Urban Water Assessment Report

Pricing and Economic Reform

Prepared by James Cox,
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Context

Pricing reform has been at the forefront of the micro-economic reform agenda of COAG for more than 15 years. This reform agenda was first articulated in the 1994 Water Reform Framework and followed up with the National Water Initiative in 2004. The National Water initiative was further augmented in 2010 with the publication of the National Water Initiative Pricing Principles.

In some jurisdictions progress has been significant and sustained. In others progress has been disappointing. The challenge is to ensure steady and continuing progress on implementing the reform program already agreed to in all jurisdictions.

There is evidence that water prices are moving towards "upper bound" levels and that a number of water utilities are seeking to set prices in a manner that reflects the long run marginal cost of water. There are, however, situations were administered prices seem to reflect the bias and prejudices of the price setter rather than the underlying economic costs, and attention should be directed to this.

A key and major challenge will be to ensure that the latest round of major investments in developing water infrastructure to secure supplies against drought and to provide for population growth are properly and fully reflected in prices. While there are good and cogent reasons to "forgive" the cost of long past historical investments, the same should not apply to those that have taken place in the recent past and are still taking place today.

There is much debate and discussion about the more effective use of markets and market mechanisms to improve the allocation of water and resources in the urban water sector. While the market has a key role to play, it is important that any changes to enhance the activities of the market are preceded by the institutional and planning changes necessary to allow a market to operate effectively.

Opportunities

Efficient pricing of water services is an outcome that is heavily dependent on a range of factors, actions and activities. It is not sufficient to consider pricing and economic reform in a narrow context. Rather efficient pricing is contingent on appropriate institutional, planning and market structure arrangements being put in place.

Pricing

Price Regulation

The case of independent price regulation and the benefits that can flow from it are well known. The use of independent price regulators is well established in several jurisdictions most notably urban NSW, Victoria and the ACT. However, independent price regulation and regulators with determinative powers is only in its formative stages in some others and there needs to be progress on this issue.

Given the extent of the investment that has taken place in recent years to secure water supplies the need for independence of regulators with determinative powers cannot be stressed too strongly. There is already anecdotal evidence in some jurisdictions to suggest that not all costs related to the recent rounds of supply and drought security measures are to be incorporated into the prices that consumers will pay. In some recent cases, governments (including the Commonwealth) have explicitly subsidised investments in the urban water industry. Such subsidies can distort investment decisions. Subsidies are inconsistent with the full cost recovery objective, distort comparisons across jurisdictions and have the potential to encourage the over consumption of water.

Price Setting

The COAG 1994 strategic water reform framework, the 2004 National Water Initiative and the 2010 NWI Pricing Principles provide a sound framework for progressing the establishment of efficient pricing regimes. Attention needs to be given to ensuring that these reforms are effectively implemented in all jurisdictions.

There are, however, limits to the extent to which codification of pricing principles can take place. At the end of the day, skill and judgement needs to be exercised to ensure efficient pricing outcomes based on the circumstances applying.

Experience has shown that some jurisdictions will use further policy development activities as an excuse to suspend progress on actions and activities that have been committed to. Care will need to be exercised to ensure ongoing progress while additional reforms are considered and a consensus reached.

Most of the developments to date have, however, focussed on water, including potable, irrigation and recycled water pricing arrangements. The urban water industry incorporates a number of other services such as sewerage, trade waste and stormwater. Pricing of these services may benefit for the development of pricing principles similar to those developed in 2010 for water services.

While a number of jurisdictions seek to set their water usage prices on the basis of some estimate of marginal cost there are a number of others who have inclining or declining block tariffs or who otherwise grant pricing concessions. The use of inclining or declining block tariffs generally mean that if one tier reflects the marginal cost, then some other water is being priced above or below marginal cost. This can result in less than efficient outcomes.

Moreover, there are cases where an administratively specified proportion of water revenue is to be obtained from volumetric charges. The proportion of revenue to be obtained from volumetric charges should be a function of the long run marginal cost of water which in turn will depend on the relative scarcity or abundance of water and the capacity of water infrastructure in each individual location. Administered predetermined revenue apportionments can lead to the inefficient allocation of resources.

Governance Arrangements

Independent Price Regulation grew up as a counter point to the development of Corporatisation in the late 1980's. The idea was that if boards and management were to be given greater autonomy for independent management, a necessary check that had to be put in place was independent price regulation to guard and protect against the potential for the abuses of monopoly power. A second objective of independent price regulation was to remove or diminish political interference in the price setting processes.

It appears that over time the autonomy of the boards and management of water agencies has been wound back and increasingly their decisions and actions are being fettered and limited by political directions. These directions are at times leading to sub-optimal investment outcomes which are imposing costs on water consumers.

Governance arrangements are a matter that is deserving of greater attention, along with the manner in which directions are given by governments. This should include consideration of funding arrangements where water agencies might be directed to undertake works that are clearly not economic for it to undertake. Increasingly, these uneconomic works are being cross subsidised by the rest of the water customer base.

Water Planning

Price setting and price regulation as well as the economical provision of water services is heavily predicated on good and clear planning. Recent experience suggests that the eastern part of Australia was largely caught unprepared by the recent drought.

There is also anecdotal evidence to suggest that in some cases decisions on strategies to secure water were delayed to the extent that the lead times necessary to implement them effectively expired thus rendering further consideration of such options not feasible. Moreover, there appear to have been instances where works were undertaken not because they represented value for money but because they could give the appearance of action.

Much greater effort needs to be given to orderly, independent and transparent planning processes where:

- All supply and demand side measure are able to be considered
- A long term perspective (20 years) is taken
- A clear and open process is adopted with achievable outcomes
- Options are supported by a rigorous costs benefit analysis
- There is a clear emphasis on value for money
- Timeframes and lead times for implementation are clearly considered to avoid options being excluded by the effluxion of time.

- Options are adopted on the basis of their respective benefit/cost ratios and not in an effort to appease various stakeholders, interest groups and decision makers, or to adopt the preferred projects of vested interests.

Standards Setting

Related to planning is the process of setting standards for urban water and waste water services.

Compliance with standards, particularly environmental standards in urban environments expected to experience significant growth, is becoming increasingly costly. These standards can affect both water and sewerage services (through waste water discharge limits). There is a need to ensure that open and transparent processes are put in place for developing and evaluating changes in standards. There also needs to be clear evidence that the change in standards being proposed are the least cost means of achieving the outcomes required.

Productivity of Water Agencies

The productivity of water agencies is of keen interest to pricing regulators because of the impact productivity, or lack of it, can have on prices.

While there is always scope for productivity improvements to be won, it is apparent that a lot of the easy gains have been made over the last decade and a half. For instance by 2005 Sydney water employed less than half the staff that it had employed at the commencement of IPART's pricing reform processes in 1993. These staff reductions also translated into reductions in operating costs. Sydney Water's operating costs were still less in 2005 than they had been in 1993, measured in real terms.

It is noted that the productivity improvements in the water industry have not been sustained over recent times. The reasons for this need to be comprehensively explored.

Performance Monitoring and Reporting

Performance monitoring and benchmarking tend to be key activities in price regulation. While not used as a form of regulation in their own right, they can provide important insights and assistance with price cap regulation (i.e. CPI +/- X regulation).

The National Performance Reporting undertaken by the National Water Commission and the Water Services Association has provided a good start down the path of performance monitoring. This reporting has now been expanded to cover not only the major urban water agencies but also smaller regional and bulk and irrigation water suppliers.

IPART has found these reports particularly useful to date.

There is, however, scope to further improve the effectiveness and usefulness of the information collected. That work should include the development of a more comprehensive suite of performance measures, which includes the ranking of all agencies. It is also considered that greater interrogation of data could be undertaken through the use of more sophisticated statistical and econometric analysis, including DEA and TFP analysis and correcting for differences between regions and utility size and structure.

The Role of the Market

We consider that there are significant benefits to be gained through competition and believes that it should be encouraged where appropriate.

There are different forms of competition and the productivity improvements in the water industry are, in part, due to greater private sector participation through outsourcing of activities by water utilities. Such outsourcing is now entrenched in the form of BOO and BOOT type contracts.

As far as more direct competition is concerned these seems a marked reluctance on the part of a number of private sector parties to assume demand risk, particularly where that means competing with an incumbent water agency.

More broadly, there are a range of market structures in the water industry in Australia. In Sydney there is a single large utility. In Victoria there are three water agencies that engage in comparative competition rather than direct competition. A priori there would not appear to be one industry structure that should be preferred over another.

All the evidence points to significant natural monopoly elements in the water industry. Any decisions on industry or market structure should ensure that the benefits that are gained from these natural monopoly elements are retained when considering the areas where competition might best be encouraged.

To aid competitive outcomes there should be better and clearer "ring-fencing" of the costs of monopoly and potentially competitive elements of incumbent water utilities activities.

NSW has introduced a Water Industry Competition Act as part of its strategy to harness the innovation and investment potential of the private sector in the water and wastewater industries and to promote competition.

To date there have been a number of applications for new proposals. Of those applications received most relate to either services not provided by the incumbent water agency or to service provision in geographical areas which are not serviced by an incumbent water agency. Examples include building developers installing sewer mining schemes to improve the environmental credentials of their buildings, and the installation of sewerage facilities for a development in an area not yet served by Sydney Water. Sydney's desalination plant has recently been licensed under the Water Industry Competition Act.

Apart from Services Sydney's initial proposal to date there have been no other access requests where head to head competition might result. It is understood that there has also been no access take-up in the UK. This may point to the need to rethink access pricing arrangements.

Market Mechanisms

A topical item of discussion in recent times dealing with the use of market mechanisms in the urban water industry is that of the use of scarcity pricing.

Scarcity pricing at the retail level would see the price of water vary depending on its availability or the level of water stored in dams. It has been advocated as a more economically efficient means of rationing water compared to the traditional use of water restrictions.

As present, however, there are a number of structural and institutional changes that would be a necessary pre-condition to the introduction of scarcity pricing at the retail level.

Scarcity pricing is not only a tool for allocating the available water between competing users on the basis of the highest bid. It also carries with it the notion that increases in price would act as an inducement for other parties to enter the market to increase the supply of water available. However, in most jurisdictions there are impediments to the orderly augmentation of supply in response to market signals. In most cases supply side decision making still falls within a central planning regime administered by state governments. Introducing transparency and flexibility in planning and supply augmentation delivery should be prerequisites to any introduction of scarcity pricing.

While the use of retail scarcity pricing has raised a lot of interest and enthusiasm in academic circles, it has to date received less support from the water industry and regulators. Water restrictions enjoy widespread support among members of the public as an equitable means of sharing available water supplies[1].

For its part IPART has signalled its intention to consider scarcity pricing at the urban bulk water level when it next reviews prices for the Sydney Catchment Authority.

Rural-urban Water Trade

Over recent years the value and quantum of water trading has increased quite substantially. This has, of course, included the Federal Government's participation in the market. There are, however, still a range of barriers to trade between rural owners and towns.

One difficulty relates to geography. For instance, Sydney Water has the capacity and the entitlement to draw small amounts of water from the upper reaches of the Macquarie River to supply the upper Blue Mountains. The limitation on trade, however, has been the lack of water resources in this area.

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[1] NSW Government *"Updating the Metropolitan Water Plan, Community Views - summary of findings from Phase 1 of consultation"*, p2

This same limitation on water availability and the inability to physically transfer water between catchments or over long distances, or even from downstream to upstream, has been the main constraint on transfers between rural and urban areas in NSW.

In the Hawkesbury Nepean system there is likely to be scope for Sydney Water or the Sydney Catchment Authority to purchase any water entitlements held by irrigators that may become available. However, there are still institutional barriers which limit the ability to transfer. Also water, when transferred, retains its characteristics. The security of irrigation water is less than that enjoyed by town water. Therefore, any transferred water will not enjoy the same security as other town water supplies. Whether this presents a real difficulty is a moot point as the NSW Water Management Act makes provision for towns to be given increased town water entitlements to cater for growth etc.

The Case of Reform

The major reforms identified as being required essentially involve a continuation of the reforms that have previously been agreed as part of previous COAG initiatives. It is felt that the case for these reforms has been made many times before and they don't need repeating here.
Suffice to say that completion of most of these reforms is long overdue. While there has been steady and substantial reform in some jurisdictions the efforts are not as evident in others.

Barriers

Past rounds of reform have shown that it can be extremely difficult to impose reform from the outside. The most successful reform periods have coincided with times when the reforms have been championed by senior figures within the water industry itself and within individual water utilities. This must be coupled with a supportive Board and a Minister committed to the reform outcomes.

These conditions do not coincide often and rarely by accident.

Recommendations

1. Independent price regulation be introduced into those jurisdictions where it does not already exist.

2. Independent price regulators to have determinative powers for both price levels and price structure.

3. Prices for water services be determined in accordance with the 1994 Strategic Water Reform Framework, the 2004 National Water initiative and the 2010 NWI Water Pricing Principles.

4. The National Water Commission give consideration to developing pricing principles for sewerage and stormwater services.

5. The practice of administratively specifying a proportion of water revenue to be obtained from volumetric charges be discontinued.

6. Greater efforts be made to the orderly, independent and transparent planning for water services where:
    - All supply and demand side measure are able to be considered
    - A long term perspective (20 years) is taken
    - A clear and open process is adopted with achievable outcomes
    - Options are supported by a rigorous costs benefit analysis
    - There is a clear emphasis on value for money
    - Timeframes and lead times for implementation are clearly considered to avoid options being excluded by the effluxion of time.
    - Options are adopted on the basis of their respective benefit/cost ratios and not in an effort to appease various stakeholders, interest groups and decision makers, or to adopt the preferred projects of vested interests.

7. All standard setting for water and related services be undertaken in an open and transparent manner and be supported by clear benefit/cost analysis.

8. The National Water Commission enhance current National Performance Reporting by commissioning independent analysis of data to better explain the reasons for variations in costs and outputs between water agencies.

9. Competition be encouraged in those parts of the water industry conducive to competition while maintaining the benefits that accrue from single providers in the natural monopoly elements.

10. To aid competitive outcomes better "ring-fencing" of the costs of monopoly and potentially competitive elements of the activities of water utilities be put in place.

11. The use of changes in price structure and other market mechanisms be supported by appropriate institutional changes to ensure that the changes can have the desired effect.