

## Lessons for India:

# Australia's Water Sector Reforms

This note summarizes some of the key developments in the Australian water sector, with the objective of identifying aspects of the reform approach and its outcomes that are relevant to India.



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## Background

The Australian water sector – in particular the developments in the sector during the last 8-10 years – offers a wide range of experiences and models that could usefully inform the sector discourse in India. Although the Australian reforms cover all rural and urban water services, including the management of resources and irrigation, this note focuses on urban water and sanitation services.<sup>1</sup>

Since the mid-1990s, a variety of approaches to corporate governance, institutional arrangements for the water sector and regulation have emerged in the different states and territories. For this reason, the water sector in Australia is a veritable laboratory, showcasing different experiences in reforming supply-driven public sector monopolies to becoming more demand-responsive and commercially viable water service providers.

Two characteristics of the Australian urban water and sanitation sector reform experience are of particular interest in the Indian context. One, that various jurisdictions have adopted different approaches to achieving a common vision and reform objective; and two, that reforms have taken place without any significant change in the public sector's dominant role in the sector. The former is relevant in view of India's federal structure and the fact that water and sanitation are state subjects in India.

<sup>1</sup> Although the reform agenda is comprehensive, and there are interesting lessons on pricing, water trading, and institutional issues from the irrigation and water resource management areas, a detailed discussion of these is beyond the scope of this note.

On this, the Australian experience provides an excellent example of how an agreed set of outcomes can be achieved through a variety of approaches.

The relevance of the second is obvious. Any pragmatic assessment of urban water sector reform options in India will conclude that most reforms will have to take place in a context where assets remain in the public sector and where, at least initially, the private sector is likely to play only a very limited role.

This note summarizes some of the key developments in the Australian water sector, with the objective of identifying aspects of the reform approach and its outcomes that are relevant to India.

The next section describes the genesis of the reform and the reform agenda. Section III analyzes the market structure, the emerging institutional models, the role of the private sector, and the different regulatory regimes. Section IV provides a summary of the tariff structures and levels. Section V focuses on the approaches to achieving and sustaining efficiency. The paper concludes with a summary of lessons for India and identifies areas where further research would be useful.

## Reform Initiatives

### Jurisdiction

As in India, under the Australian Constitution, the provision of water is the responsibility of the state (and territory) governments. The Commonwealth (central) Government's role in the water sector is centered on policy development and,

because of its monopoly over taxation, it can influence policy through a combination of fiscal incentives and suasion. States also play an important role in policy-making.<sup>2</sup>

In the water sector, the role of the Commonwealth has centered on promoting a national strategy for the reform of government-owned enterprises. As the constitutional provisions are similar to those in India, the reform approach followed in Australia provides useful lessons on how the center can effectively motivate and support states to implement reforms in a federal country.

### Genesis of Reform

Reforms in the Australian water sector were initiated in the context of a broader reform agenda. Between 1960 and 1992, Australia slipped from being the third richest developed nation in the world to the fifteenth position. This drove successive governments to initiate a wide-ranging package of reform, during the 1980s and 1990s.

As the private sector was faced with more intense international competition, it began to demand the reform of government-owned business enterprises, largely public utilities, as their performance and efficiency have an impact on the performance of the private sector. As a result of this pressure, the government initiated infrastructure (including water sector) reforms, following the reforms within the private manufacturing and financial sectors.

<sup>2</sup> International treaties are in the domain of the Commonwealth and their provisions can override state policy.

Although the process is slow and patchy and not as comprehensive as that in Australia, and although there is no national consensus in a number of sectors such as water and sewerage, in India, too, there is a strongly felt need for reform in the infrastructure sectors. This has been so especially after the industrial and trade reforms were initiated in 1991. Of late, Indian industry has been making a strong case for the fact that poor and inefficient infrastructure has an adverse effect on its productivity and competitiveness.

Although the clamor for reforms in power, roads, and ports has been high on the agenda, the need for reform in the water sector is likely to gain in importance, particularly as power reforms progress and tariffs become more realistic and as groundwater sources are further depleted.

In 1992, the Council of Australian Governments (CoAG), a national forum of the Commonwealth and state governments, initiated a national approach to competition policy with the establishment of a Committee of Inquiry known as the Hilmer Committee.

In 1995, all the Australian governments – Commonwealth and states – committed to a set of strategic reforms which were broadly in line with the Hilmer Committee recommendations and included reforms in the water, gas, electricity, and transport industries. This package of reforms was adopted in the form of the National Competition Policy (NCP), and has been the driver of change in the water industry. The water reform framework has been amended and enhanced since then, but the basic

objective – to produce an economically viable and ecologically sustainable water industry – is the same.

The NCP and the CoAG Water Reform Agenda are the two principal pillars of government policy stimulating reform in the urban water industry at the national level.<sup>3</sup> The National Water Quality Management Strategy (NWQMS), which provides guidelines to regulate issues related to public health and the environment, and the National Environment Protection Council (NEPC) are the two other elements of the reform framework.

### National Competition Policy

The NCP comprises several documents that together form a package that has provided the backbone for the reform of public utilities in Australia.<sup>4</sup>

The competition principles that are relevant to the water industry include:

- **Pricing oversight of government business enterprises.** The NCP allows a state to request the Australian Competition and Consumer Commission to become the regulator of prices for water services through the Prices Surveillance Act, 1993.

<sup>3</sup> The water reform agenda also includes the non-urban sector in which the reforms are at a less advanced stage.

<sup>4</sup> The National Competition Policy was initiated by the Hilmer report. It was subsequently embodied in the Competition Policy Reform Act (1995), and the Competition Principles Agreement. This body of documents provides the framework for the National Competition Policy.



- **Competitive neutrality** of government business enterprises and conduct of these businesses on a commercial basis, through the introduction of tax equivalent regimes and the removal of anti-competitive practices as defined in the Trade Practices Act, 1974.
- **Structural reform of public monopolies** and requirement of conformity with the Corporations Law.
- **Review of legislation** to identify anti-competitive elements.
- **Enabling third party access** to significant national infrastructure facilities.

The Federal Government also set up the National Competition Council (NCC) in November 1995 to act as a policy advisory body to oversee the implementation of the NCP. In particular, the NCC assesses the progress of reforms and recommends to the federal treasurer whether the reforms are being effectively implemented in each state and what payments, agreed under the CoAG, should flow to the states.

In view of Australia's federal structure, the actual reform path is left to the discretion of the states. Different states and territories are introducing the reforms at different rates and in different ways.

## CoAG Strategic Water Reform Framework

### Objectives

The purpose of the water sector reforms was to achieve efficient and customer-oriented service through restructuring and re-orienting the public water utilities. In addition, the reforms were also targeted at achieving economic and environmental sustainability.<sup>5</sup>

### Agreement

In September 1996, the Agricultural and Resource Management Council of Australia and New Zealand (ARMCANZ) endorsed a set of 'Generic National Milestones' developed from this CoAG Water Reform Framework. The Generic National Milestones are the basis for the negotiation of specific milestones for each state and territory.

The key feature of the NCP Agreement is that the states and territories are required to achieve pre-defined reform milestones. As a reward for achieving these milestones, the Commonwealth makes, and will continue to make, payments to the states and territories.

### Scope of Reforms

In view of Australia's federal structure, the actual reform path is left to the discretion of the states. Different states and territories are introducing the reforms at different rates and in different ways. These differences in implementation approaches reflect the differences in the initial conditions of the separate jurisdictions, such as variations

in the health of their river systems, the diversity of administrative and legislative environments across states and territories, and varying politico-economic imperatives. The reforms defined by the CoAG Strategic Water Reform Framework cover:

- **Commercially viable and justifiable water pricing and costing** for urban services and metropolitan bulk supplies and **transparency of (cross) subsidies.**
- **Institutional reforms of government monopolies to achieve separation of key institutional roles** – policy, service delivery, and regulation.
- **Performance monitoring** and best practice for the delivery of water services.<sup>6</sup>
- **Allocation and trading in sustainable water entitlements.**
- **Environment and water quality.**
- **Public consultation and education.**

As the efficiency and economic objectives of water reform are increasingly realized, the fulfillment of environmental obligations under the reform package is assuming greater importance. This environmental aspect is also important in the light of the acute problems of many of Australia's river systems.

### Leveraging Reform – NCP Agreements and Payments

The NCP is underpinned by three intergovernmental agreements:

the Competition Principles Agreement; the Conduct Code Agreement; and the Agreement to Implement the National Competition Policy and Related Reforms (Implementation Agreement).

The Commonwealth Government makes NCP payments to the states and territories (on a per capita basis), where they achieve satisfactory progress against the NCP milestones and related reform obligations. In principle, the NCP payments are the means by which 'gains' from reform are redistributed. This is based on the principle that, although the states and territories are responsible for implementing significant elements of the NCP, much of the direct financial benefit accrues to the Commonwealth Government via increases in taxation revenue resulting from greater economic activity.<sup>7</sup>

This is similar to the approach of the Government of India in reform programs such as the City Challenge Fund (CCF), the Urban Reforms Incentive Fund (URIF) and the Fiscal Reform Facility.<sup>8</sup>

Annual payments under the NCP have increased from A\$ 396 million in 1997-98 to A\$ 731 million during 2002-03 and are estimated at A\$ 750 million during 2003-04.

Although this amount is not large, relative to the overall budget of the Commonwealth Government, and the

<sup>5</sup> The CoAG Strategic Water Reform Framework (February 1994) describes in detail the reforms required in the water industry.

<sup>6</sup> As discussed in more detail later, this is done by the Water Services Association of Australia for its 26 members. The organization has 26 Australian members and two members representing New Zealand. Smaller providers are separately benchmarked.

<sup>7</sup> As it turns out, states have also benefited from higher profits and dividends.

<sup>8</sup> An important distinction between India and Australia is that the Government of Australia did not offer its states any assistance during the design of its reform process. The Government of India provides a grant for planning under the CCF. This has parallels in the South African Local Government Restructuring Grant.

states' shares are similarly small, it provides sufficient incentive at the margin for the states to stay committed to the reform program.<sup>9</sup>

### Pace of Reforms

When adopting the framework, CoAG stated that the reforms could be implemented within five to seven years, although it did recognize that the speed and extent of the reforms depended on the availability of financial resources to facilitate structural adjustment and asset refurbishment.

Although some of these deadlines have been subsequently extended, it also set completion dates for some of the major reform areas.

The initial reform timetable was optimistic and it underestimated the reform task. Significant constraints to the implementation lay in the complexity of some reforms, requiring extensive research and analysis for effective implementation.

The need for extensive consultative and educative processes and the demand that these reforms placed on governments, institutions, and stakeholders, including financial demands, also made the reform task more complex than was originally envisaged.<sup>10</sup>

<sup>9</sup> The total payment under the NCP in 2003-04 amounted to under 0.5% of the Commonwealth Government's expenditure during the year. For most states the receipts under the NCP amounted to about 0.65-0.70% of their total receipts for the year. In this context, the provision of about Rs 10 billion under the URIF and the CCF in India appears reasonable – about 0.25% of the Union Government's annual expenditure.

<sup>10</sup> It set 1998 as the date of completion for urban water pricing, institutional reforms, water trading and allocations for the environment; and 2001 for reform of rural water pricing. The timetable for environmental water allocations was extended to 2001, and 2005 for all river systems and groundwater.

## Market Structure and Emerging Institutional Arrangements

The water services industry in Australia today provides examples of a variety of institutional arrangements, a range of corporate governance models for public sector entities, a variety of regulatory regimes, and some (fewer) examples of private sector participation.

### Market Structure

In all, Australia has about 300 urban water utilities of which only 24 service more than 50,000 connections each. These 24 – the Major Urbans – serve about 13.3 million people (approximately 70 percent of the population) and are members of the Water Services Association of Australia (WSAA). There are 71 Non-Major Urban Water Utilities (NMUs) serving between 10,000-50,000 connections each, a total of about 3.2 million people (about 17 percent of the population). Around 200 authorities and/or utilities with less than 10,000 connections each serve the remaining population.

These near-300 utilities do not represent the whole spectrum with respect to the management of urban water. Typically, local governments manage storm water and road drainage functions. As a number of other bodies share the responsibility for how the resource is managed, integrated catchment management continues to present a challenge to policy-makers and regulators.

Since, as noted earlier, water is a state or territory subject, the choice of the reform approach and path has been left to the states. This has led to a number of different models for water service provision emerging within the different states. These differences can be attributed to a combination of factors – historical, technical, geographical, demographic, and political.

The situation in India is similar, with a wider variety of existing institutional arrangements for the provision of drinking water services. These include state-wide agencies, state-owned city-level utilities, and municipal provision. In view of this diversity of initial conditions, the reform approach finally adopted in each state is likely to be different. The Australian experience provides an excellent example of how different (locally suited) approaches can be used to achieve a common outcome.

The models currently obtained in Australia are discussed next.

### State-wide Agency Model

The states of South Australia (SA) and Western Australia (WA), the Northern Territory, and the Australian Capital Territory (ACT) are each served by a single state-owned utility with primary responsibility for water supply and sewerage services.<sup>11</sup> Non-metropolitan sewerage services are the responsibility of local governments in SA. For Western Australia, the Water Corporation is responsible for water supply and also provides wastewater, drainage, and irrigation services across the region.

<sup>11</sup> Though ACT is technically a territory, it is actually a city with a population of just over 300,000. As discussed in more detail later, the ACT utility is not purely a public sector utility.

The choice of the reform approach and path has been left to the states. This has led to a number of different models for water service provision emerging within the different states.

With the exception of ACT, the others are extremely sparsely-populated states with the chosen institutional model addressing the trade-off between the economies of scale and the disadvantages of centralized management. For example, WA has a population of about 1.9 million within an area of 2.5 million square km (about 75 percent the size of India).<sup>12</sup>

### Local Government Model

In New South Wales (NSW), Queensland (QLD), and Tasmania (TAS), the responsibility for water and sewerage services is vested primarily with the local governments or local water boards and, in some remote areas, with the Aboriginal and Torres Strait Islander communities.

### Regional Utility Model

With the exception of Melbourne, Victoria offers the only example of this model with more than one utility and each of the utilities servicing multiple local government areas. This is a relatively recent evolution and the result of massive consolidation. In this process, 400 local government (non-metro) utilities were consolidated into 15 regional utilities. The regional organization permits exploitation of scale economies, particularly in management.

### Ownership and Operations

#### Ownership

State or local governments own all water utilities in Australia. To date, there has been little privatization in the water

sector, with the exception of some irrigation schemes. However, a number of the water utilities have contracted out their design, construction, and various operational roles to the private sector through service contracts. In Victoria, for example, there has been significant outsourcing to the private sector for a variety of services. New South Wales also has several service contracts with the private sector.

#### Restructuring

Most of the larger water utilities have been restructured and transformed from public sector departments to corporations that are subject to the same laws that govern the private sector and with clear commercial objectives. The introduction of transparent processes to illuminate all dealings and cross subsidies has helped to eliminate the confusion that arises from the pursuit of both commercial and non-commercial objectives.

#### Governance

These new government corporations generally have government-appointed expert boards of directors that operate under the same laws that govern boards of private sector companies, with the caveat that they do not have autonomy in the determination of dividends.

#### Institutional Role Separation

A critical element of the reform package requires that the function of water service provision be separated from the roles of water resource management, standard-setting, and regulation. These roles have been unbundled and are

typically with different agencies. Separation clarifies the roles and responsibilities of the institutions and allows them to focus on their core business. These changes also enhance accountability and transparency and provide a basis for the application of the NCP principles.

#### Role of Private Sector

With the exception of ACT (see Box 4 on the ActewAGL partnership), a management contract for Adelaide in South Australia,<sup>13</sup> and some BOOT contracts, there is virtually no private sector presence in management in the Australian water sector. However, there has been significant increase in the outsourcing of specific support functions to the private sector. A more recent and innovative approach to public-private partnerships (PPPs) is the 'Alliance' model.

In spite of the limited private sector involvement in management, the reforms initiated in 1995-96 have been quite successful in increasing efficiency and implementing the 'user pays' principle within the water sector in Australia.

From the Indian perspective, this is encouraging, as any realistic assessment must conclude that in India much of the reform in UWSS will have to be through the reform of existing public utilities and agencies. The role of the private sector, at least in the medium-term, is likely to be mostly in the shape

<sup>13</sup> Some commentators note that this is strictly not a management contract but a service contract for a number of managerial services. It is also reported that lack of experience on the part of government in such contracting arrangements led to a deal that strongly favors the operator.

<sup>12</sup> Of this, nearly 1.2 million people live in Perth alone.



of service contracts with significant private sector participation restricted, at best, to the larger cities and metros. Even if the environment becomes conducive to private sector participation, it will take a very long time before there is any significant private sector presence in the more than 4,500 urban centers of India.

On the other hand, outside the water services industry (particularly in the gas and electricity industries), the need of governments to free up capital funds for other purposes, particularly the repayment of public debt, has led to the outright sale of utilities. The state of Victoria has been most active in this regard, having sold most of its major energy generation and transmission

assets. The Federal Government has also been active, selling assets in the banking, aviation, and telecommunications industries, among others. The fact that such sales have not been politically acceptable in the water sector suggests that the political economy of water is far more complex than in other sectors.

### Regulation

As with the institutional arrangements for ownership and operations, and consistent with Australia's federal structure, a variety of different regulatory regimes exist in the country. The models range from arm's length price regulation by an independent regulator to self-determination, typically

in the case of small local government water retailers. The third is the more traditional model of economic regulation by the government, with its inherent conflict of interest. This provides important lessons for India. Although the models in the different Australian states and territories are different, they have a common objective provided by the centrally-supported reform agenda. This is reflected in the following emerging trends and practices:

- There is a clear shift away from self-regulation towards the other two models, with independent regulation increasingly recognized as the ideal.
- Most of the state and territory jurisdictions favor multi-sector utility regulators.

## Box 1: Restructuring – The Western Australia Model

Prior to 1996, the Water Authority of Western Australia provided water services in Western Australia and was responsible for water resource management. It also set standards for customer services with a certain degree of external benchmarking, but without independent oversight. The government set prices on an annual basis as an integral part of its budgeting process for all government activities. In 1996 it was restructured to form three separate organizations.

- **Water Corporation:** A corporatized utility, wholly government-owned, providing water supply, sewerage, irrigation and drainage services under license to a majority of communities.
- **Office of Water Regulation:** Provides licenses and sets and enforces standards for water service provision for the regulation of the quality of services.
- **Water and Rivers Commission:** Manages and cares for the state's water resources.

Some of the salient features of switching to the public corporate model are:

**Ownership:** The corporation is wholly-owned by the government, through the Minister for Water Resources, its sole shareholder. Although there is no private ownership, there is considerable scope for private sector participation (PSP) through joint ventures or alliances with the private sector.

**Separation from General Operations:** It enjoys a considerable degree of separation, with no obligation to comply with the general day-to-day administrative policies or public service regulations to which other government entities are obliged.

**Governance:** Its management must focus on the delivery of services and on agreed business outcomes. Has a board of directors that oversees the corporation's functions. The board has a high level of management autonomy and authority, but the shareholder has the power to overview the operations of some aspects of strategic issues.

**Management and Regulation:** There is a separation of regulatory functions from service delivery. The corporation has to obtain an operating license from the Office of Water Regulation, which sets out the terms and conditions for provisions of services and standards for service delivery and customer service.

*Source: Water Corporation (2002)*

Most of the larger water utilities have been restructured and transformed from public sector departments to corporations that are subject to the same laws that govern the private sector and with clear commercial objectives.



- Quite sensibly, small local government-owned providers are exempt from economic regulation, with the exception of Victoria, where these are now served by regional utilities.

Regulation of the urban water sector extends beyond economic regulation and includes health and environmental regulation. It is important to bear in mind that health and environmental regulation have an impact on costs and that this needs to be recognized by the economic regulator (Piccinin, 2000).

#### **Economic Regulation**

Typically, the economic regulator has responsibility for both prices and customer services standards. WA and Queensland are exceptions, with the responsibility of the regulator in these states restricted to setting standards. Australian Capital Territory, New South Wales, Victoria,

and Western Australia have economic regulators. With the exception of WA, the others are all multi-sector regulators. Queensland relies on the existing competition agency (the Queensland Competition Authority, QCA) to ensure competitive neutrality and a level playing field. Although price determination is in the domain of local bodies, the QCA has recommendatory powers. Initially (in 1996), SA Water had been designated for price oversight by the Competition Commission. Subsequently, this declaration lapsed and the government determines prices.

Some states have systems of operating licenses dealing with performance and customer issues. There are various mechanisms for shareholders to exercise guidance, including Statements of Corporate Intent (SCI), customer service agreements, and strategic plans in various forms required by legislation.

The regulatory structure adopted in NSW is the most advanced, from the point of view of price regulation. The Independent Pricing and Regulatory Tribunal (IPART) is a multi-sector regulator that also regulates water prices, with stakeholder consultations as an integral part of the process. Similarly, ACT has an independent multi-sector regulator – the Independent Competition and Regulatory Commission (ICARC) – that determines revenue caps for the utility. Importantly, the actions of the other regulators, such as those in the environmental and health sectors, whose requirements can cause the costs of water services to increase, are also subject to the process of public examination, scrutiny, and justification. Northern Territory has the same arrangements as in NSW and ACT.

In other states (Victoria and WA), even though an independent economic regulator exists, tariffs are set by the



## Box 2: Alliance Model

The Alliance Model offers an interesting form of PPP that seems to be gaining popularity in Australia. The 'alliance' typically includes the staff of the client, consultants, and contractors in a project environment which is built on trust, equity, and the absence of blame.

### Services Contracts

In 1995, the Water Corporation offered two contracts for the maintenance and operation of the water distribution and sewerage infrastructure for the city of Perth, with each contract worth around A\$ 15 million per year over a period of five years. The contractors were required to set up a separate company, a 'service company', to perform the work involved. These companies were paid direct operating and maintenance costs, a management fee, and an annual performance bonus. The companies are run on an open book basis. An 'alliance board', comprising two or more senior client and the contractor representatives, meets at least quarterly. It makes the key decisions on the works, and agrees upon an annual budget and performance targets. Such decisions must be unanimous, otherwise the chairman (who is appointed by the client organization) provides final arbitration. The performance bonus is based on a number of factors, including performance levels and the degree to which the budget is met or bettered. Bonuses are paid for a particular year's achievement only, further improvements being required if bonuses are to be paid for subsequent years.

The alliance model was adopted because of the complexity involved in the day-to-day operation of water and sewerage services in major urban areas. To some extent, this arrangement alleviates the obvious difficulty and bureaucratic workload entailed in managing such contracts on a schedule-of-rates basis.

Registrations of interest were invited and a shortlist of eligible contractors invited to tender. The information provided at the time of invitation to tender was brief in comparison with the large volume that would accompany a traditional call for tenders. The contract documents were then developed through a process of consultation (lasting several months) between the client's and the contractors' staff. Both parties were mandated to assign staff to this negotiation process who would then take on the responsibility for the eventual operation of the contract. This negotiation process formed an essential part of the building of a cohesive team to focus on agreed 'alliance' objectives.

Because the initial contracts sought to replace competent direct labor workforces, the contractors were required, prior to taking up the works, to offer employment to each member of the Water Corporation's indirectly-related workforce. It was stipulated that the terms of employment must be at least as favorable as those previously enjoyed. This worked very well, with a total of 209 public service employees taking up jobs with the contractors. A great advantage of this approach was that the contractor took over a ready-skilled group of workers, adding to its own (and the client's) confidence.

A further advantage of creating a separate service company is that it offers the Water Corporation the ability to change contractors more readily in the future. Under this model, incoming contractors can choose to offer employment to the workforce of the existing service company. From the Water Corporation's point of view, it is seen to be advantageous to retain skilled staff while changing contractors.

### Construction Contracts

The alliance model was adopted for Sydney Water's Northside sewage storage tunnel project, which would not have been completed before 2001 under normal contracting methods, but was required in time for the 2000 Olympics. Because of significant negative community perception of the project, the alliance model was seen as a way of addressing these concerns. The members of the alliance set five performance criteria against which the success of the project would be measured: time, cost, safety, environment, and community. Benchmarks were set for each criterion, to be scored and audited by independent third parties. Failure to achieve success on any one of the criteria would lose the alliance 50 percent of its potential profit.

### Woodman Alliance 21

A similar approach has been applied in Western Australia to the design, construction, and initial operation of a A\$ 150-million expansion to the Woodman Point wastewater treatment plant. The augmentation project has been implemented by an alliance – called the Woodman Alliance 21 – of the Water Corp of WA (client), Kellogg Brown, and Roots Pvt. Ltd. (KBR, consultant), and Clough (contractor).

Once the alliance partners were selected (in this case KBR and Clough) they worked as a team on a 'Best for Project' basis. The other advantage of the structure is that design and construction activities overlap. Payments for costs incurred were paid into the account of the alliance, based on previous estimates (the Project Total Cost, PTC). In addition, the private partners were paid a pre-determined fee (to cover profits and overheads). They got rewarded for saving on the PTC and losses were shared in case of cost over-runs. In this case, the project was completed in time at a cost of A\$ 149 million, against an estimated PTC of A\$ 153 million. More important, the model enabled the generation of a number of efficient and cost-saving innovations.

Source: Gill (2000)

Small local government-owned providers are exempt from economic regulation, with the exception of Victoria, where these are now served by regional utilities.

### Box 3: Prevalent Examples of Private Sector Participation

**Contracts for Services.** Service contracts have been typically adopted in Operation and Management (O&M), fleet management, meter reading, engineering design, IT services, etc. The increase in service contracts has resulted in a corresponding decrease in public servants within the water utilities. In certain cases, contractors and consultants have been required to offer positions to affected government employees (whose other options have included voluntary severance packages). This has proved to be a useful means of reducing the numbers of public servants, given that most governments have policies that preclude forced retrenchment. For example, in the Water Corporation in WA, 500 of its 1,500 employees were impacted by outsource contracts and cost-cutting measures, and subsequently took up new careers under such a process.

**BOO/BOOT Schemes.** The most notable example is the Prospect Water Filtration Plant, which treats the bulk of Sydney's supply. This is run by Australian Water Services (AWS), a consortium comprising Lyonnaise des Eaux, Land Lease Corp, and P&O Australia. Sydney Water pays a fee comprising an availability charge covering 80 percent of the project's fixed costs, and a variable charge based on the quantum of water treated.

**Management Contract.** This is the single instance of a management contract. South Australian Water has contracted out the O&M of Adelaide's water and wastewater systems to United Water, for a period of 15 years. United Water: (a) manages, maintains, and operates the systems in the Adelaide urban area; (b) manages the associated capital works program; and (c) provides project management (but not construction) services for these assets. SA Water owns the assets, and is responsible for customer service and billing. As noted earlier, this is not too different from a service contract for O&M. SA Water is responsible for the raw water supply and storage for Adelaide, as well as all the services in the rest of the state. The contract was not awarded on the basis of a competitive tender but through a request for proposals. The reimbursable costs to the utility are determined annually. However, there are provisions for sharing savings as well as cost over-runs. The fee for services, decided at the outset of the first five years, is then subsequently re-negotiated.

**Alliance Model.** This is a somewhat unique approach ('alliance contracting') and was pioneered in the petroleum sector and first introduced in the Australian water sector by the Water Corporation of Western Australia. This involves forming a single company, which (though not formally incorporated) is committed to maximizing achievements against an agreed set of objectives with an agreed risk and reward structure for the different alliance partners. The alliance includes the staff of the client, consultants, and contractors in a project environment that is built on trust, cooperation, and fair play.

government.<sup>14</sup> In Victoria, the Essential Services Commission<sup>15</sup> earlier only held powers for price oversight for gas and electricity, but has recently been provided with the same powers for the water sector. In Tasmania, economic regulation is by the government. Hobart Water submits its pricing proposal to the independent economic regulator, which then makes recommendations to the government. These are not binding and may or may not be accepted. South Australia is still undecided about the future of the regulatory structure. Although there is

no final decision, the state has proposed a somewhat similar arrangement to that in WA – for a multi-utility regulator that deals only with service standards for water but with price-setting powers for other sectors.<sup>16</sup>

#### Technical Regulation

Water service providers in Australia are typically subject to health, environmental, and economic regulation, as well as the generic legislation that governs the functioning of such utilities. In almost

all cases, the relevant health department regulates compliance with national water and sewage quality standards. Similarly, a department (WA, NT) or an environmental protection authority or agency typically undertakes environmental regulation.

The allocation and management of water resources has tended to remain the responsibility of a state-level government department.<sup>17</sup>

#### Other

Natural resource management and water quality monitoring has also

<sup>14</sup> From July 1, 2003 tariff-setting has been within the jurisdiction of the regulator in Victoria.

<sup>15</sup> Till recently the Office of the Regulator-General (ORG).

<sup>16</sup> The Commonwealth Government has been threatening to withdraw some of the Competition Funds unless states such as SA and WA introduce more arms-length regulation with price-setting by regulators rather than ministers.

<sup>17</sup> Examples of these are the Dept. of Land and Water Conservation (NSW), Dept. of Natural Resources (QLD), and the Water and Rivers Commission (WA).

#### Box 4: ACTEW-AGL

ACTEW-AGL is a partnership between the public sector energy and water company ACTEW (earlier Australian Capital Territory Energy and Water), and AGL (Australian Gas and Light), a private sector energy and gas company.

##### History

- ACTEW's origins lie in a Federal works department.
- In 1988, an Energy and Water Authority was created for the Australian Capital Territory by a legislation.
- The utility was incorporated in 1995 and became a corporation owned by ACT.
- Reform and privatization attempts.
  - An attempt to sell the corporation off through a 'trade sale' (to raise money and increase efficiency) did not work as there was considerable opposition to selling off water assets.
  - An aborted attempt to merge with the NSW government-owned corporation.
  - Following this, the government advertised for offers without specifying terms and conditions. Of 19 offers received, that of AGL was accepted. AGL was a well-established (in 1837) and respected Australian company and, thus, politically acceptable.

##### Structure

- ACTEW placed its electricity assets and AGL its gas assets (plus cash) into an equal partnership company, ACTEW-AGL (in October 2000).
- The water assets remained with the state-owned asset-holding company, ACTEW.
- Three of the board members of ACTEW sit on the ACTEW-AGL six-member board. The other three are from AGL. (This is similar to the Alliance Model that is described elsewhere in this note.) Staff members have been seconded to ACTEW-AGL from the parent companies.
- ACTEW has a contract with ACTEW-AGL for managing the water business. It is a management contract based on estimated costs (total operating costs, TOC) plus a fee. The entire water sector revenue goes to ACTEW, the asset-holding company.
- ACTEW-AGL has a contract with Agility, a fully-owned subsidiary of AGL, for managing the gas business.
- The power network is owned and managed by ACTEW-AGL.
- Under the arrangement, profits are shared between ACTEW and AGL. AGL pays federal taxes but ACTEW pays only state taxes, being a state-owned company.
- A separate telecom company (TransACT) is also owned by ACTEW.
- The group is thus a true multi-sector utility (water, electricity, gas, and telecom).

##### Regulation

- Technical regulation follows from the Utilities Act (governing all four sectors), an Environment Protection Act, a Public Health Act, and a Water Resources Act.
- The Independent Competition and Regulatory Commission is the economic regulator. The economic regulator sets a revenue cap. Actual tariff levels as well as structures are left to the company.

gained significance. Jurisdictions have agreed to develop the National Water Quality Management Strategy by adopting market-based and regulatory measures dealing with water quality monitoring, catchment monitoring plans, and town wastewater and sewerage disposal.

## Tariffs<sup>18</sup>

One of the key reform areas is that of proper pricing of rural and urban water. This is to be achieved through

<sup>18</sup> Most figures based on WSAAfacts (2001), Chapter 10.

consumption-based pricing, full cost recovery, transparent (cross) subsidies, and disclosure regarding water services that are supplied at less than full cost.<sup>19</sup> These reforms are more or less

<sup>19</sup> The WCWA is subject to government-determined 'postage stamp' pricing and compensated by government for services provided below cost.

The Independent Pricing and Regulatory Tribunal is a multi-sector regulator that also regulates water prices, with stakeholder consultations as an integral part of the process.

Table 1: Summary of Regulatory Regimes

State/Territory	Regulation of		Price-setting	Regulator (MS/WS) <sup>a</sup>
	Standards	Prices		
WA	✓	✗	Government	Office of Water Regulation (OWR) <sup>b</sup> & Minister (WS)
Victoria	✓	✓	Regulator <sup>c</sup>	Essential Services Commission (MS)
Queensland	✓	✗	Local bodies	Queensland Competition Authority (QCA) <sup>d</sup> (MS)
NSW	✓	✓	Regulator	IPART (MS)
South Australia	✗	✗	Government	Minister of Water Resources (WS)
Tasmania	✓	✗	Local bodies/Govt.	Price Oversight Commission (MS)
ACT	✓	✓	Regulator	ICARC (MS)
NT	✓	✓	Regulator	Utilities Commission (MS)

Note: <sup>a</sup> MS/WS: Multi-sector/Water sector. <sup>b</sup> A bill has now been introduced in parliament to hand over regulatory responsibility to the Economic Regulatory Authority (MS). <sup>c</sup> Price oversight recently (July 1, 2003) shifted to the regulator. <sup>d</sup> QCA has recommendatory powers.

complete; many cities and major non-metropolitan urban areas now have water prices that reflect the amount of water they use and that reward conservation.

Most of the larger urban water suppliers are now practicing or implementing full cost recovery. Although this is not yet a common practice, under the CoAG reforms, full cost recovery is intended to include externalities. The reforms also require that water services earn a fair rate of return that ensures that the water business is financially viable and sustainable. The 'pay for use' principle was adopted as part of the CoAG National Water Reform Agenda.

### Tariff Structure

A two-part tariff was first adopted in 1978 by the Water Corporation in Western Australia, followed by the Hunter Water Corporation in 1982, and became national policy in 1994 through the CoAG National Water Reform Agenda.

- All states have adopted a two-part tariff for water provision. This comprises a fixed access fee and a variable usage fee.<sup>20</sup>
- Sewerage charges are generally fixed, although, in some cases, they are linked to property value. It is

<sup>20</sup> Although the access fee does not vary with usage, in some cases it does vary with the size of the connection or meter.

Table 2: Sources of Income (%)

	Water	Wastewater	Overall
Access	23	63	39.5
Usage	61	16	42.0
Other	16	21	18.5

extremely difficult to meter sewage from households because it is almost invariably gravity sewage. Pumped sewage can be metered, but this means that it may be from a housing development or an industrial site.<sup>21</sup>

<sup>21</sup> In Melbourne and in the case of Hunter Water it is quasi-volumetric: there is no meter-based pricing but pricing is based on a formula. Sydney may adopt this approach.

## Box 5: Tariff Levels

- Tariffs for water vary between A\$ 0.30-0.40 per kl, at the lowest end, to around A\$ 0.90-0.95 per kl at the highest end. WCWA has tariffs as high as A\$ 1-1.40 per kl for annual usage above 750 kl.
- Actual average annual bills per connection range from approximately A\$ 180 to A\$ 450, with the modal value between A\$ 200-300.
- Average annual bills, based on an annual consumption of 200 kl,<sup>25</sup> range from A\$ 150 to A\$ 270.
- Actual sewerage charges vary between A\$ 180-400 annually.
- The total annual charge for sewerage services, based on a 200 kl annual consumption, varies from about A\$ 330 (Goulbourn Valley Water) to A\$ 623 (WCWA).
- Given the manner in which water and sewerage charges are generally structured, a halving of water use has only about a 10 percent impact on the total bill (see Table 2).

- Over time, volumetric charges have been raised (and fixed charges reduced) with a 'demand management' objective.
- A number of utilities use an increasing block tariff (IBT)<sup>22</sup> structure for water use with typically two blocks.<sup>23</sup>

Based on this tariff structure, Table 2 shows the share of income from water and wastewater, separated according to access, usage, and other charges.

### Trends

Price reform is generally leading to higher prices but the consequential fall in water consumption has meant lower water bills, suggesting that demand at the relevant usage levels may not be totally inelastic.<sup>24</sup>

<sup>22</sup> An IBT is basically a block tariff. Under such tariffs, consumers face a low volumetric per-unit charge up to a specified quantity (or block); and then for any water consumed in addition to this they pay a higher rate up to the limit of the second block and so on. IBTs are preferred because it is believed that they promote affordability, they achieve efficiency by confronting consumers in the higher block with the marginal cost of using water, and they can raise sufficient revenues to recover costs.

<sup>23</sup> There are exceptions such as the WCWA, which has seven blocks and others such as Barwon Water, Brisbane City Council and others that have a single charge.

<sup>24</sup> Note that the price changes were accompanied by other policy measures (public awareness campaigns, promotion of re designed appliances) designed to shift the demand curve inward (Picinnin, 2003a).

The average water bill in urban areas declined in real terms by 5.5 percent over the five-year period ending 2000-01. Consumption-based pricing, rather than property value-based pricing, has given customers the correct signal to control their water bills.

## Achieving Efficiency

The reforms have targeted efficiency gains by providing better corporate governance, autonomy, and clear commercial objectives to the utilities. In addition, performance is systematically and regularly benchmarked creating 'competition by comparison'.

### Corporate Governance

In most cases, the operational management of the water service providers is either with an expertise-based corporation board appointed by the government and/or shareholders or with the Local Government Council.

In the case of the former, the government appoints the boards, but these have a life that is independent of

that of the government (see Box 6 on Corporate Governance).

### Benchmarking

Benchmarking across utilities is key to achieving efficiency in the sector. For example, in Melbourne, the performances of three public sector distribution companies are benchmarked against each other; this provides healthy, effective competition.

The WSAA benchmarks the performance of its members (the 'urban majors').<sup>26</sup> Under the CoAG agenda, there is a requirement of inter-agency performance comparison to ensure that the service providers achieve international best-practice standards.

The NCC has adopted the annual *WSAAfacts* as the industry publication for this purpose. Similarly, the performance of the 'non-major urbans' is also regularly benchmarked.

<sup>25</sup> The actual average consumption is just above 250 kl.

<sup>26</sup> Note that the WSAA is not part of the regulatory structure but an association of the water utilities themselves. Thus, the benchmarking exercise for the urban majors provides self-imposed competition.

Consumption-based pricing, rather than property value-based pricing, has given customers the correct signal to control their water bills.

## Drawing Lessons for India

As in India, economic liberalization and the exposure of the private sector to foreign competition provided the pressure for reforms in the infrastructure sector. In Australia, in 1995, a national consensus on public and infrastructure reforms emerged, which was reflected in the National Competition Policy. This provided the central themes for the reforms – making public sector entities subject to pricing oversight, competitive neutrality of public entities, structural reforms of public monopolies in accordance with the law of the land, legislative amendments to reduce anti-competitive elements, and third party access. The process of implementation that followed provides a number of useful lessons for the long overdue water sector reforms in India.

First, the Australian water sector reform experience provides an example of how a program of reforms can be coordinated and implemented in a sector that is in the legislative domain of states.

The Australian approach has allowed states to adopt locally-suited approaches and institutional arrangements for achieving a common set of outcomes.

Various institutional arrangements – state-wide water boards, as in WA, SA, NT, and ACT; local government providers, as in Queensland, and NSW; and regional utilities, as in Victoria – are all achieving the objectives of commercial viability and institutional

### Box 6: Corporate Governance – Water Corp of WA

**Board.** The board of directors has legislative authority and is responsible for the overall corporate governance of the corporation. The composition is diverse, with members coming from a variety of commercial backgrounds. There are six non-executive members (including the chairman and deputy chairman) and one executive director – the managing director (MD).

**Appointment of Directors.** The non-executive directors (part-time) are appointed by the governor on the advice of the concerned minister. They hold office for three years and the appointments are staggered with a third of the members retiring every year, though they may be re-appointed. The initial appointment of the MD is made by the minister and, subsequently, the board.

**Accountability and Independence.** Under the law, the “directors are to act honestly, exercise due care and diligence, and disclose all material personal interest in matters involving the Corp raised in Board meetings”. The board has complete independence, subject to the limitations of the law. Ministerial approval is required for matters that have an impact on the financial position of the corporation.

**Committees.** An audit and compliance committee assists the board to fulfill its corporate governance, fiduciary, and legislative responsibilities. In addition, there is an investments committee, an R&D committee, stakeholder information and publicity committee, and a source development sub-committee.

**Reporting.** Quarterly and annual reports are provided to the minister and the Office of Water Regulation.

**Ministerial Directions.** Under the Water Corporation Act, the Minister for Government Enterprises may give directions in writing to the corporation, generally with respect to the performance of its functions and, subject to Section 65, the corporation is to give effect to any such direction. (The annual report 2002 states that the corporation received **no such direction** during 2001-02.)

Some states have systems of operating licenses dealing with performance and customer issues, and there are various mechanisms for shareholders to exercise guidance. At the core of the corporation’s accountability requirements is the need to prepare a Strategic Development Plan (SDP) and a Statement of Corporate Intent (SCI) that requires shareholder approval. The SDP covers a rolling five-year period and sets out financial objectives and operational targets. The SCI, on the other hand, is an annual plan and is, in effect, the compact between the minister and the corporation. It outlines the objectives – including the continuity – of the provision of water services, performance targets, financial measures, and information on major activities that will be undertaken during the year.

A key component of the SCI is the setting of prices so that the government’s pricing and tariff objectives are balanced with the need to allow the corporation to achieve a target rate of return. The SCI plays a vital role in the evaluation by the minister-shareholder of the performance of the corporation for each financial year.



### Box 7: Examples of Benchmarking Reports

- *WSAAfacts*
- Urban Water Review 1999/00 (State of Victoria)
- Non-metropolitan Urban Water Authorities (by the Auditor General, for 15 authorities in Victoria)
- The Non-Major Urban Water Utilities 99/00 Performance Monitoring Report (prepared by AWA)
- 1999/00 NSW Water Supply and Sewerage Performance (Department of Land and Water Conservation, Government of NSW)
- Statistical Profile and Performance Benchmarking of Water Supply Services in 32 Major Western Australian Towns in 1999/00 (WA Government)
- Australian Infrastructure Scorecard
- Australian Irrigation Water Provider Benchmarking Report

reform through the separation of policy-making, service delivery, and regulation. On regulation, the separation of water resource regulation from economic regulation has been accepted and there appears to be an emerging consensus in favor of independent regulation.

Second, without interfering with the states' jurisdiction and without the equivalent of India's Centrally Sponsored Schemes,<sup>27</sup> the Australian Federal Government was able to get national consensus on a commonly-agreed set of reform principles. It was also able to provide fiscal incentives to the states to stay on the reform path using relatively small sums of money.

Third, in the Indian context, any pragmatic approach to reform of the urban water sector at scale is likely to be based on the reforms and corporatization of the existing public sector providers (boards, departments, municipal providers).

Although there aren't many examples of successful public sector reforms in third world countries, PSP is not likely to happen at scale in India (at least not in the near future) and reform of the public sector providers will, at the very least, be a necessary intermediate step. The Australian reform experience provides useful lessons and a variety of models through which this can be attempted.

Various aspects of the Australian reform experience and approach should be studied to inform the design of the water sector reforms in India. This could include the following:

- Are there lessons for Indian states

from the different institutional models present in Australia? For example, what would determine the choice between the regional, atomistic (local government) and single agency models?

- Workable models for achieving better corporate governance and accountability in a framework of public ownership.
- The strategic role of a central government in stimulating and sustaining reform. This is particularly interesting in the context of the various Indian reform initiatives, such as CCF, URIF, PSP Guidelines, and Swajaldhara.



<sup>27</sup> 'Centrally Sponsored Schemes' are schemes designed and funded by the central government for implementation in the states and are in the nature of a tied devolution.

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- A detailed analysis of the 'Alliance' model, both as an approach to contracting as well as a post-restructuring option for hived-off services and staff, and its applicability in the Indian context.
- Although the separation of water resource management from economic regulation is accepted, what are the determinants of the approach to economic regulation?
- What are the possible approaches for institutionalizing benchmarking and competition through benchmarking? Is there a need for something like the WSAA?
- Can there be a pro-active approach to creating a vibrant and relevant industry association that promotes healthy competition and provides supporting services? The Indian Water Works Association (IWWA)<sup>28</sup> could potentially make itself more relevant by playing such a role.

<sup>28</sup> Currently the IWWA is an association of individuals (mostly engineers) and not of utilities.

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April 2004

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**WSP FUNDING PARTNERS**

The Governments of Australia, Austria, Belgium, Canada, Denmark, Germany, Italy, Japan, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the United Kingdom, the United Nations Development Programme, and the World Bank.

**ACKNOWLEDGMENTS**

This note draws on presentations and meetings during Ozwater 2003, meetings with sector professionals in Australia (April 6-14, 2003), and secondary information available in the different documents listed in the references and bibliography. I would especially like to acknowledge Mark Ellery for his contribution and for directing me to the right people; Jos Mensink, Gary Watson, Wayne Harris, and Leigh Crocker for their time and inputs; and Peter Addison and John Briscoe for their detailed comments on a draft version of this paper. Special thanks are due to Claude Piccinin for providing prompt and detailed comments on various drafts of the paper and for his constant encouragement and support. Any remaining errors and omissions are my own. I would also like to acknowledge the support provided by AusAID and Austrade in coordinating the visit and arranging various meetings.

Author: Vivek Srivastava  
Photographs: Melbourne Water  
Created by: Write Media, India  
Printed at: Thomson Press, India