

# Viewpoint

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## Regulating Water Concessions

Lessons from the Buenos Aires concession

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The public water and sewerage services for Greater Buenos Aires were privatized under a concession contract three years ago. Already, there are positive results. Labor productivity has almost tripled, service coverage has increased, reliability and responsiveness have improved, and the price of service has fallen. But there are also some teething problems, especially in regulation. This Note discusses lessons for policymakers contemplating a similar approach to water sector reform.

### Strategy

Argentina privatized the water and sewerage services in the Buenos Aires metropolitan area in 1993. The assets of the public enterprise, Obras Sanitarias de la Nación (OSN), included 77 kilo-

meters of underground tunnels, 9 pumping stations, 2 treatment stations, 370 kilometers of water mains, and 19,000 kilometers of distribution pipes. Poor maintenance of the system had led to significant water losses—probably about 40 percent, although no one really cared about measuring them then. OSN produced 3.7 million cubic meters of water a day and served about 6 million inhabitants, about 70 percent of the area's population. Coverage for sewerage was even lower, at about 58 percent.

To avoid a prolonged process of privatization, the government opted to award the right to provide service under a concession rather than sell the utility, thus keeping the fixed assets under public ownership. Selling the assets would have required overcoming legislative hurdles, and the government feared that assessing the value of the underground pipes would be costly and time consuming. The government also decided not to break up the utility. A single private firm would operate the services for thirty years, a reasonable period in which to finance and complete the required investments. The concession could be extended for one year, but at the end of the term, a new bid would be organized.

The main objective of the reform was to reduce the cost to the government of operating the services while minimizing the price for service delivery. Bidders would compete to provide services at the lowest price (the largest discount to the public tariffs). No cash payments would be required. But the winning bidder, as the concessionaire, would assume responsibility for operating and maintaining the fixed assets and would be obligated to expand coverage, guarantee water quality, and develop sewage treatment. The targets for coverage imply investments of

**TABLE 1 IMPACT OF THE GREATER BUENOS AIRES WATER CONCESSION**

Indicator	Change from May 1993 to December 1995
Increase in production capacity (percent)	26
Water pipes rehabilitated (kilometers)	550
Sewers drained (kilometers)	4,800
Decline in clogged drains (percent)	97
Meters upgraded and installed	128,500
Staff reduction (percent)	47
Residents with new water connections	642,000
Residents with new sewer connections	342,000

Source: Aguas Argentinas.





about US\$4 billion over the life of the contract, with a large share to be disbursed at the beginning of the concession period. Pricing would be governed by general tariff principles set out in the concession contract, maintaining the cross-subsidies that existed under public provision. The first price review would occur after five years. There would be some possibility for renegotiating the rules in the case of an unenforceable event or new information, but any change would have to maintain the implicit rate of return proposed by the winning bidder (that is, maintain consistency between the timing of costs and the evolution of tariffs). The concessionaire would also be responsible for negotiating the private labor contracts with the labor unions (since all workers ended up “privatized”).

### Impact and lessons

The impact of the concession strategy has been generally positive (table 1). Since May 1993, the first month of private operation, the maintenance system has been revamped and the backlog of repairs significantly reduced. Rehabilitation has cut water losses to about 25 percent, according to estimates by the concessionaire, allowing coverage to increase by 10 percent with no increase in production. Coverage for sewerage services is up about 8 percent. And prices were initially reduced by 27 percent. While they rose last year, they are still 17 percent lower than those charged by the public utility.

But not all has been smooth sailing. Negotiations with the unions, for example, have been tense, though first impressions suggest a successful outcome. Most direct indicators of labor productivity show dramatic improvements. And after a 48 percent reduction in staff in the first year of operation, the concessionaire is now recruiting to keep up with the demand for services. But indirect labor costs remain high, comparable to what they were under public management, as the concessionaire continues to provide many of the fringe benefits traditionally available to civil servants (total labor costs are still about 60 percent of operating costs). The most difficult adjustments, however, have been in the regulatory area.

### Competition

Water distribution and sewage collection are natural monopolies, so the scope for direct market competition is limited to minor activities, such as billing and revenue collection. In the Buenos Aires concession, competition was introduced through the bidding process. This process, which plays a critical role in drawing out enough information to ensure that a concession is awarded successfully, generally worked well.

The rules required potential bidders to prequalify to limit the bidding to firms with strong technical and financial capabilities and to ensure that any foreign bidders would be the very top operators. The call for bids went out in June 1992, requesting two envelopes. The first, which determined whether a bidder qualified, held technical offers (including legal features of the bidder, a mission statement, operational plans, proposed regulations for users, and a US\$3 million guarantee of commitment to the offer). The second envelope, opened if a bidder qualified, held financial and economic offers, including adjustments to the current tariff rate, indicators of financial strength and commitment, and an explanation of how the bidder would operate with the new tariff. The contract would go to the bidder offering the largest discount to the public tariffs. The rest of the information to be provided was essentially intended to demonstrate that the discount proposed would allow revenues consistent with the level and timing of expenditure commitments.

The concession contract was awarded in December 1992 (transfer occurred in May 1993) to Aguas Argentinas, a consortium headed by Lyonnaise des Eaux-Dumez that offered a tariff discount of 26.9 percent. This result suggests that the competition for the market has been effective in reducing costs to users. To sustain this gain, the national government is considering yardstick competition when the price review comes due—possible now that some of the provincial services have also been privatized under concessions. Yardstick competition is used effectively in the United Kingdom, where the regulator calculates and widely publicizes water companies' comparative efficiency.

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### **Government as regulator rather than service provider**

A key to the success of the bidding process has been its transparency. Just as important is transparency in the concession contract—clear and unambiguous assignment and enforcement of the rights and obligations of the concessionaire. The main regulatory instrument, this contract spells out the rules of the game for the private monopoly. But for the privatization to be effective, the Argentine government has had to recognize that once a private operator takes over, it is in charge within the terms of the contract. That does not mean that the government has no role. Because competition is limited to the initial bidding and the rebidding at the end of the concession (crucial to the effectiveness of the initial bidding), the government has a critical role to play as a regulator. But this is not a day-to-day management role. Some argue that the level of detail in the Buenos Aires concession contract reveals reluctance by the government to give up management of the service and that the contract focuses too much on processes and detailed targets. There may be some truth in this, but it also reflects the lack of data at the time of bidding. Also true, however, is that private monopolies will try to keep regulators at a distance to make the most of their monopoly power. The challenge is to design a contract that achieves the right balance. This requires good data, which can take time to collect.

The government's new regulatory role is in the hands of a newly created independent regulatory agency, Ente Tripartito de Obras y Servicios Sanitarios (ETOSS). The agency is financed by a user fee levied on consumers and governed by a directorate appointed to a six-year term, with the option of one renewable term. It monitors the concessionaire, enforces the concession contract and regulatory decisions, and levies fines when necessary. This new role may be the most difficult fact to accept for the newly created regulatory agency, as many of the agency's employees had worked for the public water utility. Most recognize that they need new skills to be effective regulators and that when they lack the skills for a particular task,

they need to recruit international experts—as they did recently to assess a request by the concessionaire for an adjustment in the contractual investment plan.

### **Adjustments and renegotiation**

Soon after the concession had been awarded, water quality problems revealed that the infrastructure was in worse shape than the government and the concessionaire had estimated. So in June 1994, they agreed to speed up the delivery of some service requirements. The resulting cost increases triggered a contract clause (over 7 percent) allowing an increase in tariffs, and Aguas Argentinas was granted a 13.5 percent tariff hike. There was much public confusion about this increase, and many users felt that it was unfair. Poor explanation of the approval process to the users was partly to blame for this perception.

This experience reinforces the need for rules allowing adjustment in the terms of concession contracts when new information becomes available or circumstances change. It also shows the need for regulators to ensure that the public understands their decisions and perceives them as independent. This requires transparency both in analysis and in decisionmaking. Although the concession contract should be prepared as if it were not going to change, under specific, limited circumstances, some flexibility may be good policy. To ensure that the contract is a credible regulatory instrument, modifications should be arrived at through fair and workable renegotiation rules based on clear, preestablished criteria and agreed to by all parties. Fortunately, the Aguas Argentinas contract included such a rule.

The challenge for policymakers is to find a transparent mechanism for modifying the terms of the contract without undermining investor or consumer confidence. A renegotiation rule should expose what changed unexpectedly. For example, if the assets deteriorated between the time the bids were made and the transfer of the assets, what was the cause? Was it the weather? Or did the public operators stop maintaining the assets? If the first, responsibility



might be shared between the government and the concessionaire. If the second, the concessionaire might have a fair claim for revising the contract. The public policy criteria for testing whether revision is needed must be pre-established and clearly defined. And any change to the contract that is warranted should be limited to the issue at hand: the entire contract should not be renegotiated. Of course, unilateral modification of the rights defined in the contract or the bidding documents—say, through a request to accelerate investment or a move to impede tariff adjustments, without full compensation—is tantamount to expropriation and defeats the purpose of reform.

### Investment and tariffs

The design of the tariff formula is at the core of effective regulation and critical to the sustainability of the reforms. The regulatory regime recognizes legitimate costs and allows an additional profit margin (a loose form of cost-plus regulation, as information on cost is very approximate). There are about four different kinds of tariff structures. Which structure is applied depends on the kind of building involved, and how the tariff is charged depends on whether the consumer is metered. The design of this family of tariffs introduces a number of distortions. First, the metering incentive is in the wrong direction. Consumers have an incentive to install a meter only if their consumption is small, but without meters it is difficult for the concessionaire to track water losses. Second, average prices are lower for large users than for small users, yet for water, unlike for electricity, there is no technological justification for this. And third, the two-part tariff for metered customers leads to cross-subsidy problems. The tariff has a fixed part to cover the cost of infrastructure and a variable part that is proportional to consumption. But total connection costs are less than total revenue from the fixed part of the tariff. The resulting cross-subsidies lead to inefficient and often inequitable investment decisions.

Another problem with the tariff formula is that it provides little incentive to invest in expanding the sewerage system. The metered tariff

creates a complex system of cross-subsidies between water and sewerage services. Although the water and sewerage charges are higher than operating costs, they do not fully cover investment costs. The contract allows the concessionaire to use revenues from existing clients to cover water system expansion costs not covered by new customers.

### Conclusion

As Argentina is finding out, regulating a private monopoly can be challenging. Its experience suggests that to maximize the gains from water privatization, reformers in other countries should make the most of competition for the market, make sure that the government is comfortable with shifting its role from service provider to regulator, anticipate needs for renegotiating or adjusting the terms of the contract, and not underestimate the problems of tariff design.

The Argentine regulators, to their credit, are aware of the tariff design problems and are dealing with them systematically. For example, they are commissioning a tariff study (from an international consulting company) that should lead to marginal cost pricing and to a new tariff based on metering. With the benefit of hindsight, many in the government may regret not having commissioned the study much earlier, when the sector was being restructured. That would have prevented the delay in implementing efficient and equitable tariff principles—and many of the disagreements that have arisen among users, providers, and regulators since May 1993.

For more on this topic, see A. Estache, F. Helou, and M. Rodriguez-Pardina, "A Portable Description of Water Regulation in Argentina's Main Concessions," World Bank, Latin America and the Caribbean, Country Department I, Washington, D.C., 1995; E. Idelovitch and K. Ringskog, "Private Sector Participation in Water Supply and Sanitation in Latin America," World Bank, Washington, D.C., 1995; and World Bank, "Argentina, Reforming Provincial Utilities: Issues, Challenges, and Best Practice," Report 15063-AR, Washington, D.C.

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