



Delivering Water Infrastructure using Private Finance

A white paper from KPMG's Global Infrastructure team

ADVISORY



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Introduction

Water is vital to human survival, but it is also a precious commodity ruled by the same forces of supply and demand that govern other markets. The cost of producing water where it is plentiful is significantly cheaper than in arid countries.

Treating raw water, making it available to the public, and managing wastewater are expensive processes. The average cost to desalinate seawater is USD 1,000 per cubic meter per day (m^3/d) and USD 400 per m^3/d to treat wastewater, bearing in mind the average per capita daily consumption in the Gulf Cooperation Council or in the United States is in the range of 400 to 500 liters. Typically, the average capital investment in water projects runs between USD 200 to USD 300 million. To manage the cost of infrastructure assets, governments have long used available funding methods, such as user fees, taxes, and municipal bonds. However, some governments are embracing concessions and other forms of Public Private Partnerships (PPPs or P3s) to help turn a significant short-term financial cost into a long-term financial proposition for sponsors. Under such deals, a private sector provider commonly designs, builds, finances, and operates a plant, receiving payment on the basis of the availability of the facilities and for the amounts of water actually provided. These contractual relationships between public and private entities involve aligning a significant investment of private capital, transferring some risk to the private sector, and increasing the public benefit from public infrastructure.

This white paper examines the risks and rewards of water PPPs and discusses how municipal governments and potential investors can benefit.

Using private finance to build, operate, and maintain water infrastructure

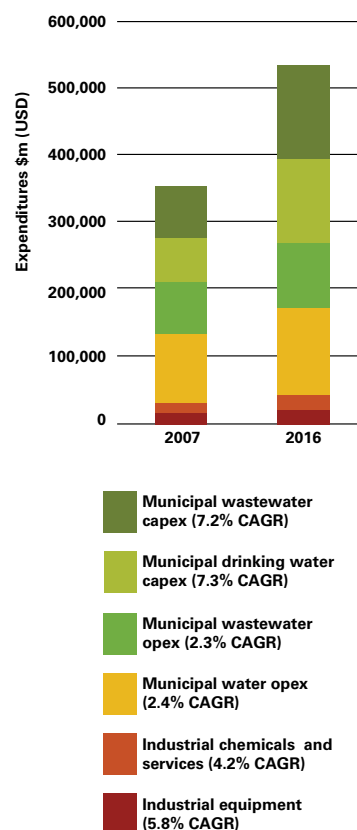
Water: vital commodity

Although more than 70 percent of the earth is covered by water, it remains an extraordinarily valuable commodity in arid regions such as the Middle East, Asia Pacific, and Africa. Governments have been driven to improve water infrastructure by the twin requirements of improving water supply in regions subject to scarcity and enhancing the effectiveness of wastewater treatment and recycling.

There are three principal water services that governments provide for their citizens:

- Water Treatment Plants (WTPs) and distribution to customers
- Wastewater Treatment Plants (WWTPs) and collection
- Wastewater recycling (treatment technology has advanced to the point that sewer water can be cleaned and repurposed for irrigation, industrial use, or aquifer recharge)

Global water market growth 2007–2016



Source: Global Water Intelligence (2007)

Regional trends

Investments in the water sector are expected to total more than USD 6 trillion over the next 20 years, according to Siemens Financial Services.

As illustrated by the chart to the left, demand for investment in water infrastructure is projected to increase substantially. But not every region has the same water needs and challenges. For instance, the Asia Pacific region is driven by growing population densities such as China, where there is an emphasis on efficient management of water resources and a pressing need to upgrade wastewater facilities.

Growth in the Middle East and Africa is driven by scarcity, population growth, and broad economic development, which means there is a large need for desalination facilities and an urgent need to increase treated wastewater reuse.

The needs in Eastern Europe are not driven by population density or scarcity of supply, but rather by European Union (EU) regulations that require new entrants to comply with EU water and wastewater standards. These countries must therefore upgrade their wastewater facilities to be accepted into the EU and benefit from its economic opportunities.

The long-term nature of a PPP increases financial flexibility while providing dependable cash flow.

Traditional vs. privately financed procurement

Traditionally, governments have addressed the cost of building and maintaining water plants and networks by collecting user fees, raising taxes, and issuing bonds against those revenue streams. The government entities assume most of the financial risks for the project such as construction delays and repair costs.

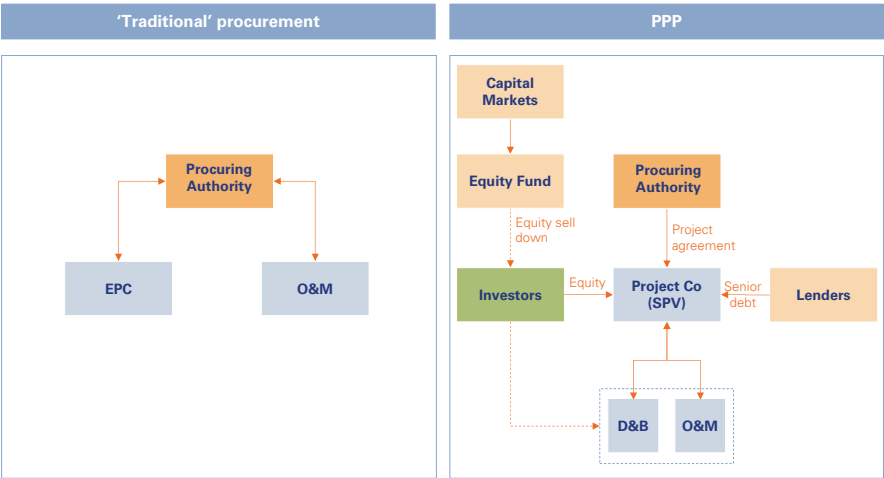
However, shortages of capital funding and rising maintenance costs of old and failing facilities, as well as more stringent environmental standards, have placed many governments in the position of needing to undertake substantial capital replacement, refurbishment, or expansion of their facilities without sufficient available capital.

The fundamental basis of privately financed transactions, whether concessions or PPPs, is that they provide a proven mechanism for governments to alleviate the need for direct capital expenditure on new facilities whilst also potentially improving service provision.

Under many of these structures, a private sector operator is contracted to design, build, finance, and operate a plant and/or a network, borrowing capital from a lender, either through debt or bonds, and investing equity. The provider then receives payment from the government and/or the end users for the duration of the contract that covers the cost of operations, repays the loan, and provides a return on investment.

The long-term nature of a PPP provides a source of dependable cash flow for project sponsors (contractors, operators, and other long-term private sector investors that invest in public

Privately financed transactions: a very different game



EPC – Engineering Procurement and Construction
O&M – Operate and Maintain
D&B – Design and Build
SPV – Special Purpose Vehicle

Source: KPMG LLP

infrastructure). Both the PPP investment capital and the PPP infrastructure projects are often public in nature. Although these transactions bring together groups with traditionally different objectives—public needs vs. private interests—they are bound by a common commitment to deliver long-term benefits to society as a whole.

Private financing in the water sector – a proven strategy

Private sector participation is a proven strategy in the water sector, as demonstrated by the steady growth in the number of projects and by the diversity of new entrants into this market.

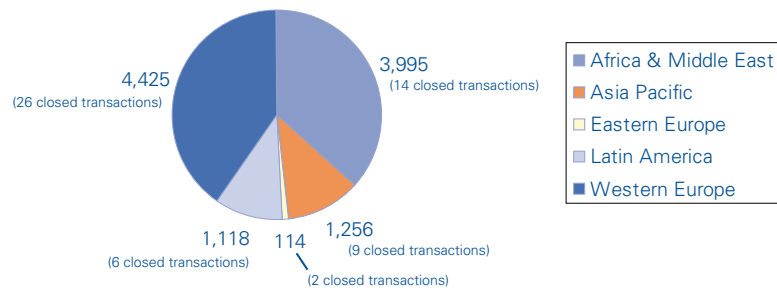
Internationally, there are many types of active projects, including:

- Concessions (e.g. in Saudi Arabia, China, Spain, United Arab Emirates)
- Leases and affermage contracts (e.g., in Algeria, Slovakia, USA)
- Management contracts (e.g. in Oman, Russia, Armenia)

Why involve the private sector?

Private participation can help where public sector reform is not enough. By engaging a private sector firm, governments widen their reform options by:

Cumulative value of closed transactions since 2005 (in USD millions)



Creating a focus on service and commercial performance

A well-designed private participation arrangement will hold a private firm accountable for its contribution to service improvements and reward it for controlling costs and introducing a businesslike approach to billing and collection. This can translate into a changed culture and attitudes, creating an organizational focus on providing service at least cost.

Making it easier to access capital

Providers of finance, such as banks and the bond markets, may be more willing to put their money in a utility if they see it has a credible, commercial management approach. Having a private firm run the utility is one way to provide that credibility.

Just as important is what private firms cannot do:

No free money

Involving a private firm can make it easier to get finance for the water sector. But finance will only be provided when the operating cash flows of the utility are expected to provide a return on the investment and repay the investment over time. In other words, the cost of

service ultimately has to be met by customers or, if the government agrees to provide subsidies, taxpayers.

No unlimited risk-bearing

Private firms are able to manage many risks, such as (depending on the circumstances) billing customers properly, controlling operating costs, and expanding networks. But they will be cautious about accepting major risks beyond their control, such as droughts or rapid exchange rate changes, and they will price accordingly if asked to bear these risks. Private firms will also want to know that governments will respect the rules of the game and not create risk by changing policies mid-stream.

Government responsibility continues

Citizens will continue to hold governments accountable for the quality of their water services. Governments do not usually escape this accountability by involving the private sector. Rather, governments need to consider whether delegating some service provision responsibilities to a private firm will make it easier to ensure that the services that people want are provided.



Governments do not escape accountability by involving the private sector.

Opportunities

Privately funded water facilities can offer investors and public entities long-term benefits. Following is a sample list:

- *Multiple vs. single service providers:* Competition for integrated (i.e. design, build, finance, and operate) long-term contracts focusing on public service outcomes can harness private sector creativity, resulting in innovations that better serve the public interest. To achieve these innovations, the procurement process requires transparency and accountability

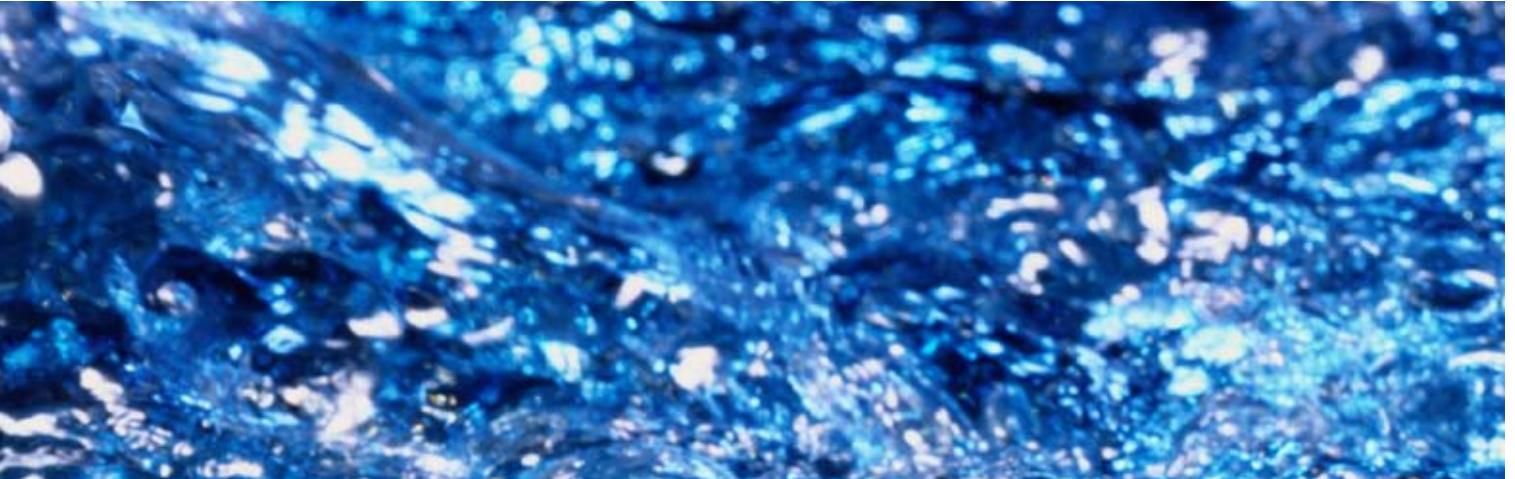
throughout the contract. A limitation of the design-bid-build (which is most common to the U.S. market) process is that the public agency only sees the architectural and engineering solution of one service provider, with one combination of cost, quality, and time attributes. A single service provider, however, is never in a position—either technically or financially—to fully consider and compare all alternatives for design, technology, initial, or life cycle costs. As a result, the single service provider's limitations become those of the owner.

A case for water P3s in the U.S.

The United States appears to be a prime candidate for PPPs, especially since state and local budgets have been significantly impacted by the collapse of the U.S. housing market. The collapse and the subsequent credit crunch have contributed directly to depressed property values, tighter credit, and wider municipal budget gaps. According to the Washington, DC-based Center on Budget and Policy Priorities, over half of all U.S. states will face a total budget shortfall of at least (USD 47 billion) in 2009.¹

Many municipal infrastructure projects, including the upgrading of long-neglected United States water and sewer systems, were conceived when funding from taxes was steady and commercial bank capital was readily available at attractive rates. Tougher economic conditions in the U.S. have left state and local treasuries looking for a massive cash infusion from the federal government in order to help pay for vital municipal services and infrastructure rebuilding. Although the Drinking Water Revolving Fund makes funds available for building and maintaining community water systems, communities that are particularly stretched may be inclined to reach out to private investors and the innovative financing of PPPs to help bridge municipal budget gaps.

¹ Center on Budget and Policy Priorities, *29 States Face Total Budget Shortfall of at Least USD 48 billion in 2009; 3 Others Expect Budget Problems*, May 21, 2008, www.cbpp.org



- *Advantages of multiple service providers:* Innovative procurement processes permit the owner to review multiple design concepts from multiple service providers. The design-build, design-build-operate-maintain, and design-build-finance-operate project delivery systems, as well as their derivatives, increase the amount of conceptual and functional design done by proposing parties. Thus, the government can evaluate several design concepts, which also integrate the life cycle tasks of production and maintenance to varying degrees.

Projects spectrum

The contractual arrangements typically used for these transactions span an entire spectrum, from simple management contracts to partial or full-scale divestiture.

All refer to financial and commercial arrangements with the following defining characteristics:

- Long-term contractual arrangement
- Public sector retains strategic control over service delivery—by setting the specifications and regulating prices
- Private sector contractor takes full responsibility for design, delivery, and operations and accepts the responsibilities and risks of delivering the project
- Payments are made by one or both of the following:
 - Users of the service (e.g. water rates or connection fees)
 - The public sector partner for performance and availability and, in some cases, usage
- Whole life costs are minimized
- Designed to encourage the most efficient use of public sector resources (i.e. value for money)

In traditional procurement, the public is in charge of financing and the contracting authority has all the business responsibilities: it is responsible for managing the business, operating and maintaining the assets, investing in new assets, and financing the business. In concessions, the operator has practically all the business responsibilities (business responsibilities exclude such policy responsibilities as setting tariffs and quality standards). In management

contracts, affermage-leases, and hybrid arrangements, business responsibilities are shared between the operator and the contracting authority. A big part of designing the arrangement is deciding how to allocate business responsibilities between the operator and the contracting authority.

Risks come about because the world is unpredictable. For instance, demand for water services may be higher or lower than forecast. Costs may be higher or lower than forecast. Exchange rates will change. The question is who should bear these risks? Who should bear the losses or experience the gains? If the operator bears cost risks, for example, then the operator makes bigger profits if costs fall and smaller profits—or losses—if costs rise. On the other hand, if customers bear cost risks, then customers lose if costs rise and win if they fall; the operator's profits are unaffected.

It is useful to think about responsibilities and risks together. Operators may be given responsibility for the things they are able to do better than government, and may take the risks naturally associated with those responsibilities. For example, if the operator is



Appropriate and acceptable allocation of risks can be complex and requires careful consideration.

responsible for collections, it will often be a good idea for the operator to bear collection risk (that is, for the operator's profits to depend in part on the utility's ability to collect what customers owe).

The key is to ensure that project agreements reflect an acceptable risk allocation mechanism for all parties. This is not simply a question of identifying output specifications and performance standards. It also means recognizing the practical constraints, i.e., policy, managerial, and operational, that could restrict the private sector from developing an optimal solution.

Risk can be divided into two broad categories:

1. *Operation-related risks* – the set of risks associated with operating and maintaining service
2. *Investment-related risk* – the set of risks associated with investment in new infrastructure, for example, extending a distribution network, developing a new bulk water source, or constructing a new wastewater treatment facility

Within these broad categories, there are many more specific risks associated with particular responsibilities or aspects of the operating environment. The

figure on the next page illustrates the relationship between key risks and how they ultimately affect cash flows. Each box is associated with a specific risk: a variation in any of these parameters will flow through to cause an increase, or a decrease, in the total value of the business.

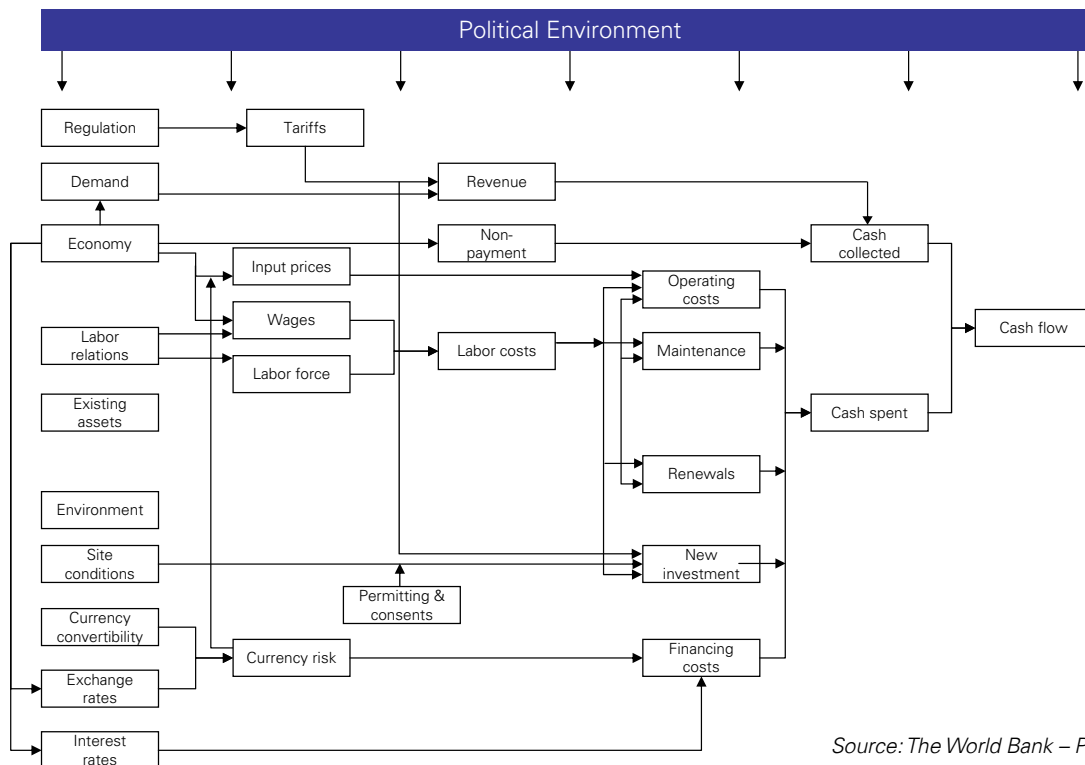
Identifying and allocating risks is complicated for several reasons:

There are multiple risks. Many risks affect the water sector, including demand, cost, construction, nonpayment, etc.

One risk is often a bundle of other, more specific risks. For example, construction risk can include unpredictable variation in input prices, the condition of the construction site, or in the cost or availability of labor.

Risks are interrelated. An unexpected change in demand, for example, will influence revenue, operating and maintenance costs, the need for new investment, and the need for financing. Depending on the tariff-adjustment rules, a change may also lead to new tariffs, which, in turn, influence demand.

To illustrate the considerations involved in deciding how specific risks should be allocated, it is useful to focus on an important risk: demand risk.



Source: The World Bank – PSP Toolkit

Demand risk

Demand risk affects many elements of the water and sanitation sector and can have a significant impact on business value. Fluctuations in demand can make new investments too big or too small, which can increase costs. Demand risk

can affect all parts of a water and sanitation company, including commercial performance, operation and maintenance, and new investment.

Given the potential business impact of demand variations, it is important to consider carefully who is best placed to bear demand risk.

Who can best predict changes in demand? Private water and sanitation companies generally have the technical expertise needed to derive reasonable projections of demand as long as data on historical usage, customer numbers, and economic and demographic trends are available and accurate.

Different approaches

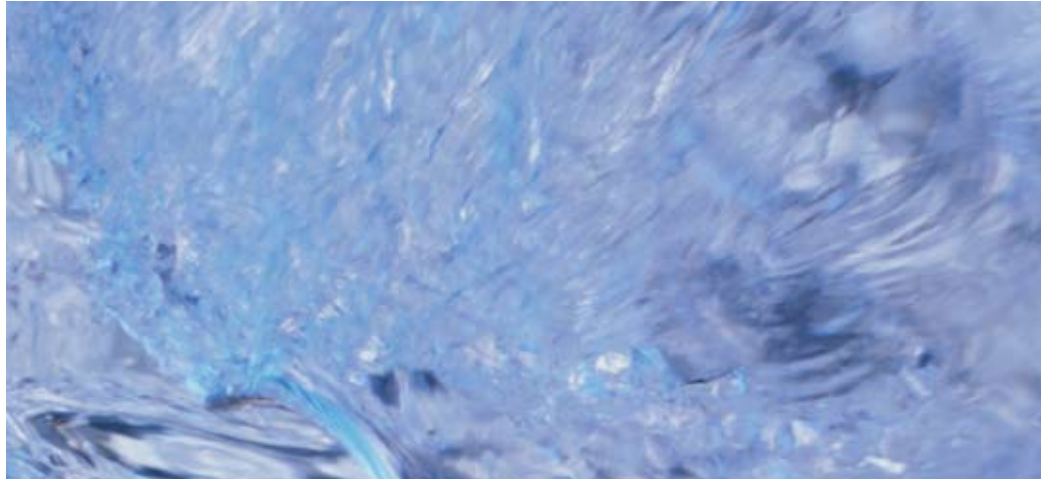
A Middle East-based property developer
There is a significant trend in the Middle East for new large-scale developments for which all utilities are being delivered through concessions (water, wastewater, power, etc.). Examples include Palm Islands in Dubai and the King Abdullah Economic City in Saudi Arabia, which will eventually be home to more than two million people and include a variety of economical industrial activities.

The many reasons why these property developers decided to rely on private funding to procure the utilities include:

- Accessing private sector financing and leveraging their own funds for other priority projects
- Fulfilling the utilities' needs within the developments faster than traditional procurements
- Creating a market that maximizes interest and competition among potential concessionaires, including both international and local players, and increases value for money for the end users

Structuring these concessions represents particular challenges, e.g. in terms of demand-risk allocation and minimum off-take guarantees to be provided to the concessionaires (as the population is not yet there). But these concessions also enable the developers to better attract and retain businesses and industries and use their own funds for more suitable purposes.

Moreover, these concessions represent a higher value to developers than traditional EPC contracts. The developers may benefit by setting up their own utility company, which would retain a stake in the projects and receive part of the profits generated by the concessionaire.



Who can influence the risk? Influencing the demand for water services is difficult. Once customers are connected, they can use as much or as little water as they wish. But customer behavior can be influenced through metering policies, changes in tariffs, legislated rationing, and public relations campaigns to discourage waste.

Who can control the impact? Operators can mitigate the impact of unexpected demand variations by adjusting maintenance and investment programs. If demand falls, the operator might defer a planned water source expansion or cut back on leakage reduction. Conversely, if demand increases unexpectedly, the operator might seek to optimize system capacity by increasing investment in leakage reduction.

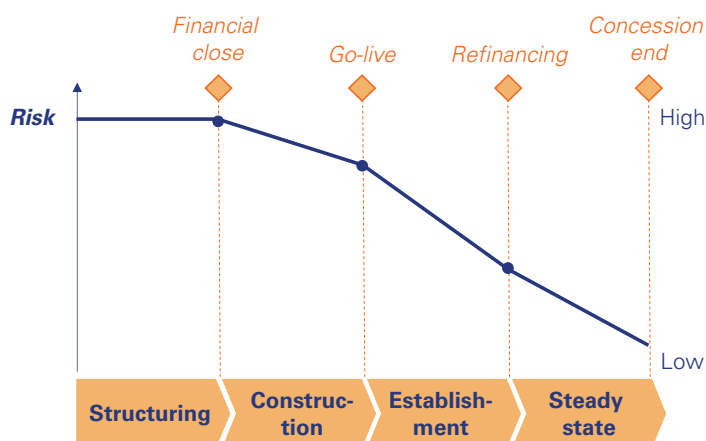
Who can diversify or absorb the risk? The ability of water and sanitation companies to absorb demand risk is limited by their cost structure. A large proportion of costs is fixed. So when

demand falls, the average cost to the operator of delivering each unit of water rises. Therefore, it is at least plausible to allow tariffs to increase if demand is substantially below forecast levels. If tariff-setting rules leave demand risk largely with the operator rather than customers, the operator's overall risk exposure increases significantly, and the sustainability of the arrangement may be threatened.

The extent to which demand risk is shared between the contracting authority and the operator depends on the particular circumstances of the project, including the availability of good information on demand, economic stability, and the operator's willingness to accept risk. In practice, operators will be reluctant to fully assume demand risk and will seek to pass it on to customers in tariffs or reduced service levels, or to enter into a take or pay, where their payments are not directly linked to the volume of service consumed.



Evolution of project risk



Source: KPMG LLP

Risk allocation under different private sector participation models

Each of the standard models of private participation – management contracts, leases, and concession – is associated with, and to some extent defined by, a

particular allocation of responsibilities and risks. One way of designing the arrangement is to determine whether one of the three standard models (management contracts, lease and concession) can deliver the desired outcome. In practice, allocation of risk and responsibility under these three standard models may not match the preferred outcome. If this is the case, a tailored or hybrid approach can be developed to achieve the desired allocation. Hybrids of different models are common.

Management contract

Under a management contract, the operator fills key management positions in the water company with appropriately skilled staff. The publicly owned water company continues to be accountable for other responsibilities—operating and maintaining existing assets and undertaking new investment. The risk transferred to the operator depends on the performance bonus. If there is no performance bonus, the operator bears the risk of not being paid by the contracting authority, but bears little of the risks of the water business. If there is a performance bonus, the formula for the bonus determines in large part how much risk is shifted to the operator. For typical management contracts, very little risk is transferred to the operator. (How risk is shared between the contracting authority and customers depends on rules governing tariff adjustment).

Affermage – Leases

Under an affermage or lease, the responsibility for operating and maintaining existing assets, plus commercial and management responsibilities, is passed on to the operator. The contracting authority retains responsibility for new investment. The risk transferred from the



contracting authority to the operator is usually significant, but it depends on the details of the contract and, in particular, the way the operator's remuneration is determined. Under an affermage, the tariff-adjustment rules that matter most are those applying to the operator's tariff (or affermage fee). Under a lease, the operator gets the customer tariff minus a lease payment, so the tariff adjustment rules that matter most are those that apply to the customer tariff.

Concessions

Under a concession, the operator assumes full responsibility for service delivery, management, operation and maintenance of existing assets, and new investment. The risk transferred from the contracting authority to the operator is usually substantial, but depends on the form of the contract (e.g., Will it be by way of transfer of ownership, exclusive lease, or license of site or assets?) and, in particular, the rules for adjusting the customer tariff. This concession-based approach does expose the private sector

to substantial degree of risk (i.e. there is high exposure to regulatory and policy risks, with risks attached to contractual arrangements such as tariff revision formula). Risks that one would expect the private sector to bear under the concession model include operation, upgrade, and improvement of systems risk.

Hybrid models

Various types of customized risk-sharing arrangements are possible. These could include an "affermage-lease plus" arrangement. Under a standard affermage-lease the contracting authority retains full responsibility for undertaking and financing new investment. However, it may be desirable to transfer some responsibility for investment to the operator. For example, the operator is usually better placed to manage construction of new assets. Mechanisms for sharing responsibility for new investment include:

- *Limited investment targets for the operator.* For example, the operator could be given responsibility for



extending service coverage to poor areas, or peri-urban neighborhoods, while the contracting authority retains responsibility for other investments.

- *Cofinancing.* Cofinancing agreements between the operator and the contracting authority, or a development agency, under which investment and finance costs and risks would be shared.
- *Sharing investment responsibility between the parties.* An affermage-lease contract can include responsibility for some investments (such as network extensions).

Other key considerations

In addition, public sector parties and private investors should be aware of the following:

- *Concession and PPP agreements are complex and require long-term commitments from both parties.* Because of the potential risks and

returns involved, these agreements tend to be complex. Public sector agencies must be vigilant and secure experienced advisors to support them in negotiations and to bring proven practices to the table to protect the public interest. This means seeking legal, financial, demand and revenue forecasting, and engineering support.

- *There must be effective communication with stakeholders.* A common challenge facing innovative financing programs and projects is maintaining open, credible, and effective communications among interested stakeholders. This means clearly articulating the business case, or justifying the need for engaging in such a transaction. Such a business case must be articulated in clear, nontechnical language so all stakeholders can understand it. All too often, concession or PPP contracts contain technical, financial, and engineering jargon that is difficult for most stakeholders to understand. This technical language is not clarified in an overall business

case, leading some to believe this is intentionally done to confuse public stakeholders into believing relying on private funding is the only way to proceed with needed projects.

- *Participants must navigate the learning curve:* The days of robust governmental funding have ended as the proceeds from taxes have failed to keep pace with infrastructure needs. Other nations have experienced successes as well as some failures through this process. There are lessons to be learned and a “learning curve” to climb. Still, the prospects for success are strong; otherwise, the private sector would not be willing to participate in such transaction.

Private sector participation can extract additional value from infrastructure in two principal ways—by monetizing future user charges and by improving long-term operational efficiency and effectiveness. Private sector creativity has a major role to play in creating value from infrastructure using both methods.



Monetization

Generally, user charges do not cover the cost of provision, but most domestic agencies have not aggressively adjusted charge rates to a market rate or a revenue-optimizing rate as there has been strong user resistance to raise them. This hesitancy to charge at market rates begs the question: Would people be willing to pay a higher charge in exchange for the certainty of getting water on demand?

Private sector concessionaires believe in the value of a fair charge and have been willing to make considerable upfront payments in exchange for a long-term concession. Nevertheless, the public sector retains fundamental control of the concession through administering the terms of the contract. Long after the concession agreement is signed, the following risks will remain:

- The private sector will likely bear the investment risk
- The public will bear the risk of future charge increases
- The governing agency will bear the risk of adverse public opinion if the concession is not well managed

The attempt to balance these risks to the public, the private operator, and the public agency will help assure that the agreement will result in enhanced water availability to the public, a fair return to the private company, and proper oversight by the governing agency. The two key considerations in the monetization of an asset are the term of the agreement and the flexibility in setting charge rates.

Water demand and pricing risk

The private sector must also manage the demand risk in calculating its upfront payment, while the governing agency must protect itself against excessive charge rate increases. The greater the ability of the concessionaire to raise charges, the larger the upfront payment they will likely make. Even though free market forces might permit a certain level of charge increases, governments must regulate the tolls to a reasonable level in the concession agreement. Governments must demonstrate to the public that they received value for the charge paid each and every time they use water.



The risks associated with poor projections

The high degree of financial leverage necessary to produce a winning bid on the part of the private entity may produce unintended results if the private entity cannot service the debt. Excessive or poorly structured debt could cause the private entity financial stress, increasing the need for a government takeover should the operator default. Any default could diminish the appetite in future concession deals.

Alternatively, if the private sector is initially excessively pessimistic about the project's cash flow and it actually results in significant profits, the result can be a policy backlash. No politician can justify excessive profits to the voting public. To protect against this risk, a properly designed concession agreement would provide for payments back to the governing agency in the event the private sector exceeds the maximum internal rate of return.

A final issue in monetization is the distinction between existing assets (brownfield assets) and new assets (greenfield assets). Brownfield assets

have less demand risk because there is a history of demand patterns and there is no risk of construction cost overruns. Greenfield assets generally have a higher risk transfer to the private entity and, accordingly, may have higher implicit rates of return.

Operational efficiency

The traditional infrastructure procurement method used to budget construction, enhancement, maintenance, and/or operation of water facilities may result in suboptimal outcomes. That's because most government budgets are based on a one or two year budget cycle for operating costs, with capital projects subject to a five-year work plan. Often, governments may find themselves pressured to balance the budget by incrementally deferring maintenance or deferring capital projects—a process that may appear innocent on a project-by-project basis. But the exponential nature of deferring maintenance or capital projects over time can result in breakdowns in infrastructure or capacity shortages that compromise public needs.

Once a government gets behind in maintenance, it becomes very difficult

to recover. The government is then put into a position of choosing between maintaining or rehabilitating existing infrastructure or building capacity necessary to fuel the growth in its economy. This dilemma can lead to unintended maintenance backlogs, substandard service quality, and life-cycle costs that are considerably higher than would have been achievable with optimal maintenance.

How private funding impacts operational efficiency

The long-term nature of concession and PPP contracts allows governments to build maintenance costs into the net present value of the monetization and assign responsibility for maintenance to the private sector. The private sector can plan and implement accordingly, since it focuses on the long-term internal rate of return, not the current-year budget cycle that can compromise service quality.



This long-term approach, often referred to as life cycle asset management, can be reflected in the innovative design and construction solutions for privately funded water facilities, such as using more expensive construction materials that may increase the investment

cost but decrease the longer-term maintenance costs, thereby decreasing the total net present value of the project. Governments also have the ability to impose strict operations and maintenance requirements in concession agreements and lock in future maintenance costs.

While this approach may decrease upfront payments from private concessionaires, governments can effectively remove the responsibility for maintenance from their budgets and thus not make those costs subject to year-to-year budget pressures.

Conclusion

Water is vital to human survival, and it is also expensive to treat, distribute, and recycle. Capital and maintenance funding needs—coupled with ongoing budget pressures—have necessitated governments to seek creative funding and project delivery options for building new water treatment facilities and recycling plants.

Relying on private funding can serve as a proven alternative to traditional infrastructure provision for leveraging scarce public resources and relieving the pressures on government entities. When considering whether private sector participation can serve their needs, both state governments and investors should consider the following:

- *Accessing private funding is a tool for public sector procurement that focuses on public service outcomes.* Infrastructure procurements have been traditionally based on money allocated to individual contracts compared to privately funded transactions that holistically seek value based on the outcome of the facility. In traditional procurements, state governments focus on meeting contract letting schedules and seeking the lowest cost bidder, instead of adherence to completion schedules and budgets. In concessions and PPP contracts, the focus is on the outcomes of quality projects delivered on time and within budget on a highly accelerated development timetable.
- *Private sector participation can harness private sector creativity and encourage efficiency for public benefit.* Competitions for integrated (i.e., design–build–finance–operate) long-term contracts focusing on public service outcomes harness private sector creativity, resulting in innovations that can serve the public interest.
- *Value can be extracted from infrastructure through monetizing future user charges and through improving long-term operational efficiency and effectiveness.* Concessions and PPPs create value from infrastructure in two ways: monetizing future user charges and improving long-term operational efficiency and effectiveness. Private sector creativity plays a major role in creating value from infrastructure using both methods.
- *The public sector retains full control even when relying on private funding.* These transactions encourage accountability as they retain the public sector client's fundamental control based on the contractual relationship between the two entities. If the public sector is dissatisfied with substandard service relative to the terms of the contract agreement, it can require the contractor to perform according to the agreed-to standards or terminate the contract based on a breach of the performance requirements contained in the contract terms.

About the author:

Bastien Simeon joined KPMG in France in 2007 after almost 10 years with Veolia Water, part of the Veolia Environment group—the world leader in environmental services.

An engineer by background, he has worked on numerous water projects in the Middle East (e.g., King Abdullah Economic City in Saudi Arabia), as well as Asia (e.g., the first water BOT in China, a 270,000 m³/d water treatment plant in Chengdu), and Europe.

Bastien is now leading KPMG's project financing advisory services in the water sector on a global basis. He and his team are among others currently advising Nakheel in Dubai on structuring and procuring concessions for desalination and wastewater treatment plants requiring investments in excess of USD 4 billion. He is also advising the St. Petersburg Vodokanal on what will be the first water and wastewater concession in Russia, requiring an investment of USD 3 billion.

Contact:
Bastien Simeon
Tel: +33 156 884 236
e-Mail: bsimeon@kpmg.com

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