Part II Water Sector—A Private Equity Perspective
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Introduction
The water demand-supply gap is worsening in India and many regions in the country are already facing water scarcity (see Chapter 1). The current water development and management system is not sustainable and there is a chronic need for huge infrastructure investments in the sector. A large part of the investments in the past were by the government but major financial resource gaps remain. Though a number of areas for private investment in water infrastructure exist, the level of private investments are far and few in between. In this section, we identify various bottlenecks that have constrained private investment in water infrastructure. The view presented here is from a private equity investor’s perspective, which would typically be echoed by other kinds of financial investors interested in the sector. Private Equity (PE) funds provide capital during the early stages of a sector/project with an investment horizon of about 3–7 years. As project cash flows/company operations stabilize, companies are able to attract public market investors, in turn providing an exit for the private equity investors.

A typical water cycle is presented in Figure 15.2.1. Prima facie, a number of segments can be identified which may serve as business models for private equity investment. These are: bulk water supply, water treatment plants, desalination, distribution of water and

![Figure 15.2.1 Schematic of Typical Water Cycle](Source: IDFC PE Research (2010)).
allied activities, wastewater treatment, domestic filtration systems, and the bottled water and ancillary manufacturing business. Despite the numerous opportunities, the actual number of deals funded by private equity funds is only a handful in India.

**PE in the Indian Water Sector—the Experience Till Date**

PE investments in the water sector are feasible in most segments where the private sector is involved. Prominent areas which can readily witness a significant level of activity are: engineering, procurement and construction services (EPC), project SPV/holding companies (Holdcos), and equipment manufacturing.

However, in the past 5 years or so, there has been a cautious movement by PE investors towards this sector. A list of investments that have happened over this period are given in Table 15.2.1.

The overall amount is quite modest as compared to the other sectors. Additionally, it can be observed that most of the investment flow has happened towards the services segment. Another inference that can be drawn from Table 15.2.1 is that there has been limited PE investment that has directly flown into PPP projects. Compared to this, the power sector alone attracted $3.8 billion in investment in last 5 years from PE investors. Besides assets, the power sector has also seen investment across the value chain, including engineering services and value added products. This is largely a reflection of the fact that policies in the water sector have not succeeded in generating enough numbers of viable projects and fundamental investor concerns have not yet been mitigated.

On the other hand, several countries around the world have seen significant investment activity in core water projects. More often than not, the governments in these countries have encouraged corporates to provide high service levels to customers (that is, citizens) by improving efficiency of the existing systems and also investing in newer infrastructure. Along with enlisting the support of the private sector on the infrastructure side, these countries have also established appropriate regulatory mechanisms to govern the sector. Further, companies have been empowered to reduce water leakages/wastages, metering the connections, and billing and collecting tariffs from customers. Over a period of time, many companies that have been involved in this sector are regarded as large fundamental utilities that can provide a relatively stable yield to investors on a consistent basis. Overall, Europe can be considered to be at the forefront of the water management industry. A majority of the services, especially in UK and France are handled by private operators. But it is interesting to note that there are privatized (or semi-privatized) publicly listed players across the globe in countries, such as the US, Brazil, China, and Thailand (Table 15.2.2). And hence the encouraging point for India is that once we get our act right in terms of the policy framework, our water projects can attract funding not only from PE investors but also from global public market investors.

<table>
<thead>
<tr>
<th>PE Fund</th>
<th>Amount ($ mn)</th>
<th>Company</th>
<th>Business</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEF</td>
<td>25</td>
<td>Saisudhir Infra</td>
<td>EPC</td>
<td>Feb 2011</td>
</tr>
<tr>
<td>Peepul capital</td>
<td>12</td>
<td>Aqua Designs India</td>
<td>EPC</td>
<td>Jul 2010</td>
</tr>
<tr>
<td>IVF</td>
<td>20</td>
<td>UEM</td>
<td>EPC</td>
<td>Jul 2010</td>
</tr>
<tr>
<td>Chryscap</td>
<td>22</td>
<td>Pratibha Industries</td>
<td>EPC</td>
<td>Oct 2010</td>
</tr>
<tr>
<td>Sage Capital</td>
<td>10</td>
<td>Concorde Enviro</td>
<td>EPC - Wastewater</td>
<td>Dec 2009</td>
</tr>
<tr>
<td>Axis PE</td>
<td>13</td>
<td>Vishwa Infrastructure</td>
<td>EPC + BOT</td>
<td>Jul 2008</td>
</tr>
<tr>
<td>Origo-Sino India</td>
<td>11.5</td>
<td>Halosource</td>
<td>Water Purification technology</td>
<td>Jul 2008</td>
</tr>
<tr>
<td>IDFC PE</td>
<td>8</td>
<td>Doshion</td>
<td>EPC + BOT</td>
<td>Nov 2007</td>
</tr>
<tr>
<td>ICICI Venture</td>
<td>12</td>
<td>VA Tech Wabag</td>
<td>EPC</td>
<td>Aug 2006</td>
</tr>
</tbody>
</table>

*Source: VC Circle Deal Database.*
Table 15.2.2 Market Capitalization of Global Water Companies

<table>
<thead>
<tr>
<th>Sr</th>
<th>Company1 (Country)</th>
<th>Market Cap (US$ mn)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Veolia Environment (France)</td>
<td>16,010</td>
</tr>
<tr>
<td>2</td>
<td>Northumbrian Water (UK)</td>
<td>2,720</td>
</tr>
<tr>
<td>3</td>
<td>China Water Affairs (China)</td>
<td>518</td>
</tr>
<tr>
<td>4</td>
<td>Manila Water Company (Philippines)</td>
<td>851</td>
</tr>
<tr>
<td>5</td>
<td>SABESP (Brazil)</td>
<td>6,420</td>
</tr>
<tr>
<td>6</td>
<td>California Water Services (US)</td>
<td>758</td>
</tr>
</tbody>
</table>


What Steps would the Investors Like to See?

From a macro perspective, the water sector presents a promising opportunity for investors. But despite the huge demand-supply gap, the sector has till date failed to attract the level of investment witnessed in other sectors. This is primarily due to the absence of certain key factors that investors evaluate prior to committing large pools of capital. The most important parameter for investment continues to be establishing a financially viable business model. Typically, a viable business model should be able to recover the initial capex as well as recurring opex from user charges. In certain sectors where a ‘user pay’ principle is not established clearly, the government may need to assure cash flows to the private sector against performance till the time that the sector matures. The roads sector where the government used the annuity model is a good example of this point.

Further, the water sector has a limited track record of successful private projects. And given the financial and political risks attached to project execution, it is considered to be a relatively risky investment. This is likely to lead to a Catch-22 situation where projects would face challenges in financial closure while investors will continue to look out for successful model projects from the sidelines.

The solution lies in a multi-pronged approach where on the one hand, states and urban local bodies (ULBs) need to establish a clear regulatory framework for service level requirements, tariff determination, and revenue risk mitigation, while on the other hand it should take steps to improve the cost recovery of water supply and distribution. Steps such as leakage detection, faulty pipeline replacement, metering of all connections, and regular billing and collections are vital not only from a private investor’s perspective but also for restoring the financial health of ULBs.

Some of the measures that could change the overall attractiveness of the sector for PE investors are now outlined.

1. Reduction of Non-Revenue Water

Non-revenue water (NRW) is the quantum of water that is supplied but no revenue has been accounted for. The concept is explained in the schematic shown in Figure 15.2.2.

Indian ULBs are reported to have NRW as high as 50–60 per cent which combined with extremely low tariffs and poorly designed infrastructure results in huge operating losses. About 25 per cent of these losses occur in commercial water supply. Compared to this, developed countries have a typical NRW of 15 per cent of which only 3 per cent comes from commercial water supply.

Amongst the various action points that can be taken, the areas that can be tackled in the short term are:

- Metering
- Leakage detection

As observed in the utility benchmarking exercise conducted by ADB in 2007, the utilities that have a large proportion of connections metered (for example, Bengalure and Coimbatore) are able to recover their operating expenditure from the water revenue. Considering that there is a significant amount of funding involved, the government should invite established private players to invest and reduce NRW. The government should establish target service level standards against which it could pay an annual operating fee to a private player.

Such projects will improve the generation of water revenue thereby improving the profitability of the utility, generate data for designing financially viable projects, and provide private players a hands-on experience of

1 The primary objective of this list is to illustrate the presence of listed water management companies. Some of them would have other businesses apart from water management.
managing water projects thereby making the sector attractive for larger private investments in the future.

2. Regulations Governing Tariff Determination

Given the multiplicity of institutions involved and the high political sensitivity of the sector, the tariff principles also vary (TERI 2010) across cities ranging from a volumetric based method (for example, Hyderabad, Chennai, and Delhi) where the metering infrastructure is available, to non-volumetric flat rates (for example, Raipur), or flat taxes (for example, Ahmadabad where 30 per cent of the property tax is being taken as water charges). However, there is no central regulatory body (for example, like OFWAT in UK) that determines the pricing and service quality for water supply. Since at times political pressure also plays a part in tariff determination there is little or no focus on cost recovery (both capex and opex) rendering a question mark on the financial viability of a project. To ensure private capital flows into the sector, the government needs to establish a transparent and financially viable tariff setting mechanism. To the extent that the government feels the need (say, for protecting the economically backward sections of society) for having lower tariffs, it needs to provide an explicit subsidy in order to support the financial viability of a project.

3. Bankability of Revenue

Water projects are capital intensive in nature and would require debt support from banks and other financial institutions. These institutions require security of cash flows to provide debt support for such projects. Given that most ULBs are in a poor financial health and largely dependent on support from the centre and the states to meet their operating expenditures, bankability of such projects would be suspect. ULBs and state governments need to establish payment mechanisms, such as escrow accounts and/or sovereign guarantees in favour of private operators to improve the bankability of the projects. Agencies can look at the power sector as an example where in the initial stages of private sector participation, power purchase agreements (PPAs) provided a 3-tier security mechanism (comprising bank LC and state government and central government guarantees) for project financiers to mitigate the risk posed by financially weak SEBs.

4. Model Contracts

Setting up of standardized procedures for contracting, procurement, and award of projects, with identified roles and responsibilities of both public and private agencies, facilitates the smooth award, financing, and execution of projects. Defining these aspects upfront...
in a transparent manner would also help in handling politically sensitive decision-making in the sector. Similar steps in other infrastructure sectors, such as power, roads, and ports have proved to be reasonably successful.

5. JNNURM—Phase II

The Jawaharlal Nehru National Urban Renewal Mission (JNNURM) programme has been one of the most important steps taken by the government for facilitating development of the entire urban sector. The reform linked funding of projects has spurred the states to at least initiate some measures of reforms (for example, levy of property tax). Whilst the programme can be hailed as a step in the right direction, the overall results of JNNURM appear to be mixed. To make the sector attractive and investible, the central government may consider coming up with the next phase of JNNURM and including some of the suggestions made earlier as part of the states’/ULBs’ reform process. It may also consider stipulating\(^2\) to the states that certain category of projects need to be necessarily implemented on a PPP basis.

**Conclusion**

Given the lack of basic infrastructure and the huge capital investment required to achieve minimum service levels, the water sector presents a potentially large opportunity for PE investors. Although India has witnessed few water projects on a PPP basis, even then the lack of demonstrated success stories, poor financial health of ULBs, and high degree of regulatory/political uncertainty has kept large PE investments away from the sector till date.

It is ironic that while the central government, through JNNURM, is attempting to channel funding for the urban water space, the private sector is largely waiting on the sidelines despite the huge demand-supply gap. The need of the hour is for the government to step up and initiate some of the key reform process outlined in this chapter. In domestic water supply, the government can invite private players to improve and renovate existing infrastructure measures, such as reducing leakages, customer metering, and maintenance of other distribution infrastructure. The government can also invite private players in bulk water supply projects where it can initially tackle the customer end of a project, while the private players can focus on investing and implementing capital intensive projects expeditiously. Such initiatives are relatively less risky and can improve the financial health of ULBs, while also ushering in the private sector’s expertise into the sector. The success of such projects will lay the path for bigger and more complicated projects in the future.

India has most of the ingredients in place for the water sector to see a take-off in activity. We have witnessed a strong political intent (across parties) with respect to overall reforms in infrastructure. Our entrepreneurs have shown the ability to develop world class infrastructure, competing against even the largest MNCs. We have a strong banking system thus providing ready project finance (which is absolutely critical) for long gestation projects. Alongside steady term funding, we have sufficient risk capital in the form of PE, which is ready to flow into the sector even at an early stage. The last few years have also shown the acceptance of capital markets towards core infrastructure stocks, thereby providing another deep source of funding. Indeed, the time is now ripe for the government to take note of and apply the learnings from other infrastructure sectors for the benefit of the water sector. If the water sector witnesses the measures articulated in this chapter, capital would surely not be a constraining factor for its growth.

**References**

TERI (2010), Review of current practices in determining user charges and incorporation of economic principles of pricing of urban water supply, TERI, (April).


\(^2\) In the roads sector, NHAI had taken a policy decision a few years ago to develop projects primarily on a BOT basis rather than as cash contracts.