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The Water Business in China: Looking below the surface

PROPERTY AND INFRASTRUCTURE

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Introduction

Improvements to China's water infrastructure have been driven by the twin requirements of improving water supply in regions subject to scarcity and enhancing the effectiveness of water treatment.

In this publication, we will consider how these considerations interact and how they impact the water business in China. We identify opportunities for international investors and also suggest ways that the operations of the market could be enhanced.

China’s water market structure

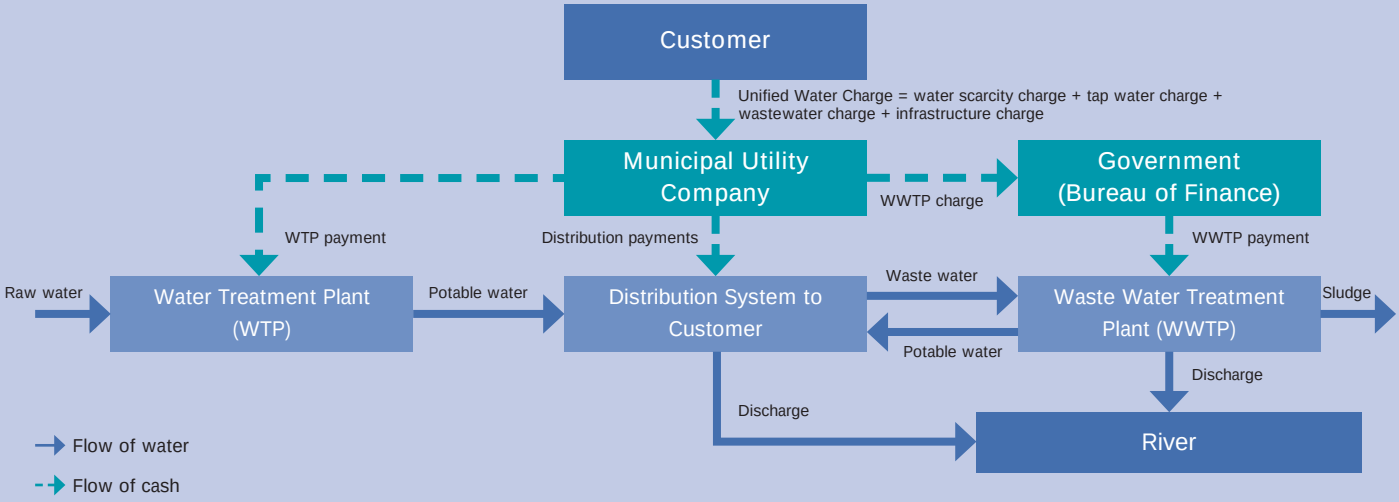
For each of the three main types of water operations, water treatment plants (WTPs), water distribution to customers and wastewater treatment plants (WWTPs), there are a number of major opportunities in China for investors.

WTPs

According to the latest Foreign Investment Catalogue (2007), foreign investment is encouraged in the urban WTP sector. Furthermore, there are no maximum shareholding restrictions in this category.

The coverage of WTPs in Chinese cities is generally good. However, more stringent water quality requirements became effective on 1 July 2007, which increased the number of key performance indicators (KPIs) from 35 to 106. It has been estimated that 1,500 WTPs will have to invest in expensive upgrades in order to be able to meet these new regulatory requirements. This represents a major opportunity for foreign water treatment equipment manufacturers.

Structure of the water market



Water distribution

Foreign investors can invest in distribution networks in large cities by taking a minority stake (up to 49 percent) in a joint venture with the municipal utility company. The joint venture can then enter into concessions with contractors to manage the network.

In small and medium-sized cities, foreign shareholders are permitted to build and operate water supply and drainage networks, and there are no formal restrictions on ownership of water and wastewater pipe networks.

The main opportunity for investment in this area is as a result of rapid urbanisation — according to the United Nations Population Fund, it is estimated that some 18 million people migrate from rural areas to cities in China every year. Substantial investment in the expansion of distribution networks will be needed to support such a rapid pace of urbanisation.

In addition, resolution of non-revenue water (NRW) issues, where treated water is distributed but for which no payment is received, represents an important way for investors to improve the operating performance of networks.

These NRW issues arise due to three key factors:

- Leakage: Water distribution systems in certain cities are old, and lifecycle expenditure has often been constrained by budgets.
- Metering: It is common for meters to be inaccurate, and on occasion meters have not been installed.
- Misappropriation of water.

Investment or other initiatives to resolve these problems can result in immediate improvements to the top and bottom line.

WWTPs

Foreign investors are encouraged to invest in WWTPs in urban areas either via wholly owned companies or by entering into a joint venture with the municipal utility company or another party. The joint venture then enters into a Build Operate Transfer (BOT) or Transfer Operate Transfer (TOT) concession contract with the municipal utility company.

Wastewater treatment continues to be a major issue in China. There has been significant investment in this sector as part of China's 11th Five Year Plan, which has resulted in certain cities, such as Beijing, having a high wastewater treatment rate (up to 90 percent). It is estimated by the Ministry of Construction that the urban treatment rates averaged 56 percent in 2006, so significant further investment will be required to reach the 2010 target of a 70 percent treatment rate for cities with a municipal government.

It has been estimated by the Ministry of Construction, that as at early 2006, 278 cities in China (around 40 percent) still did not have any wastewater treatment facilities. Furthermore, mirroring demand for distribution systems, further WWTP construction will be required as urban populations expand.

Massive investment is also required for repairing sewerage systems and flood drains. However, given municipal budget constraints, it is likely that priority will be given to other environmental projects unless water distribution and WWTP systems are integrated under the same operator, in which case there may be an economic benefit from increasing WWTP throughput.

Water market players and trends

Private sector involvement in China's water market is growing, but foreign investment still only accounts for less than 10 percent of the total investment in the water/wastewater sector, according to the Ministry of Construction.

BOT and TOT contracts are common for WTPs and WWTPs, though most plants are still built on a Design and Build (DB) or an Engineering, Procurement and Construction (EPC) basis.

There are a large number of private sector participants in the market. Further, there is a diverse range of companies involved including:

- Large multinationals (for example, Veolia, Suez)
- Domestic Investors (Beijing Capital, Tianjin Capital Environmental Protection, Guangdong Investment)
- Domestic Operators (Shanghai Municipal Raw Water, Golden State Environmental Group, Sound Group)
- Other specialised operators (Hyflux, Asian Environmental Holding).

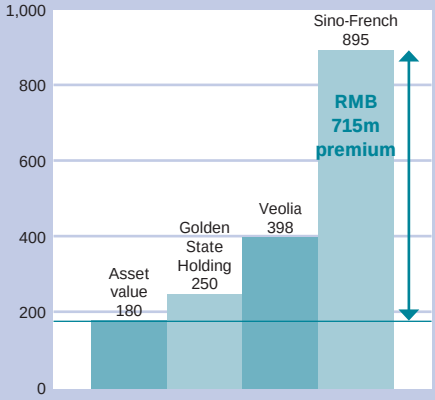
Market trends

With so many market players, bidding tends to be very competitive, both for BOT plant projects between smaller players, and for distribution network investments for the largest players.

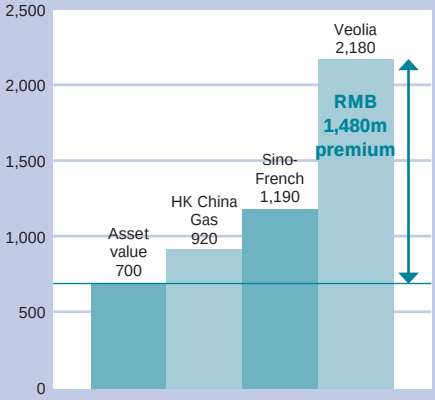
A good illustration of this competition is the rapidly increasing premiums that are being offered to secure preferred bidder status for distribution network joint ventures with municipal authorities, as can been seen from the graphs of premiums offered as part of recent tenders.

Premiums in recent deals (2007)

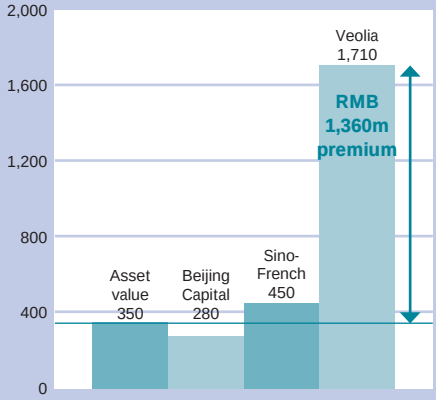
Yangzhou (in RMB million)



Tianjin (in RMB million)



Lanzhou (in RMB million)



Source: Factiva, companies' websites, KPMG analysis

There are a number of reasons why such premiums are being offered, which include:

Strategic bidding

Companies may take a bullish view on factors including:

- GDP growth and a supportive local government which, together, will potentially facilitate tariff increases
- Population growth within the existing system which will increase volume expectations
- Multiplying efficiencies from economies of scale, system improvements or synergies with other operations
- Feasible network expansion opportunities which will generate additional revenue.

Competitive bidding

Companies may bid high in order to secure preferred bidder status, at which point the competition drops away and renegotiation can begin. Companies may support returns that are restricted to 12 percent by legislation through additional income from consultancy or other additional services provided to the joint venture. The premium is therefore a way for certain bidders to utilise their strong balance sheets for a competitive advantage.

The main advantage of these premiums is that they are a major capital inflow for municipalities. They can use these funds for less commercially attractive, but socially important, investments.

However, these premiums are setting a poor precedent, as municipal expectations are growing ever higher, even though the quality of the opportunities coming to market will fall gradually. Furthermore, these large and uncertain premiums raise difficult questions about how municipalities should assess project feasibility, and more generally how to allow for this potential cash inflow when preparing municipal budgets.

There is concern that the premiums have now reached levels at which most private sector companies, particularly domestic companies, cannot compete, even though they may be suitable JV partners in all other respects.

It has been reported that the State Council is currently reviewing a report prepared by the Ministry of Construction and the National Development Reform Commission regarding the acquisition of municipal water supply projects by foreign companies in China. Although the contents of this report have not yet been made public, it is believed that the focus of the report is to address issues relating to current high premium levels,

Increasing market efficiency

The Chinese government has recognised the importance of resolving water shortage and pollution issues. This was clearly demonstrated during the recent 17th CPC Party Congress.

Further improvements in the quality of service to consumers will most likely be achieved through implementation of further market reform. Such reform could include the following steps:

Ensuring quality

Rationalisation of the regulatory system and clarification of roles

Currently seven different national level ministries or commissions are involved in water management, with the Ministry of Construction taking overall responsibility for urban water services, and the Ministry of Water Resources having overall responsibility for rural water services. The proposed rationalisation and reform of the energy market regulatory and supervisory system by creating a Ministry of Energy may act as a precedent and pilot for similar reforms in the water sector.

Development of legislation to improve market transparency

The Ministry of Construction has issued standard BOT contracts which allow for significant variation of interpretation between bidders. Enhancing the robustness of these contracts should improve the comparability between bidders and make closed deals more effective.

Making public all tenders for projects

Currently, most tenders are run on a selective basis, with the sponsor inviting a limited number of private sector companies to bid. As a result, particularly where the local authorities have limited market information, the most appropriate partner may not necessarily have an opportunity to bid. By increasing the level of competition via public announcement of the project, value can be created for the municipality sponsor through more advantageous project terms.

Tightening of bidding criteria

Currently, there is often substantial variation between bid terms for a project. This implies that bidders are bidding on very different bases, or have very different views on the risks associated with the project. Enhancement of the bidding process may be acheived by ensuring bidders have comprehensive project information on which to base their bids, sufficient time to prepare robust bids and clear instructions on how to prepare their tenders, including deal structure and, where appropriate, project constraints. This should improve comparability between bidders. Bidders may be provided the opportunity to demonstrate and obtain benefit for innovative ideas through submission of variant bids.

Extension of competitive bidding

Currently, preferred bidders are often selected early in the procurement process, based on limited information. This can lead to incomplete, non-robust or heavily caveated bids. By extending the period of procurement under competition, a more robust deal can be reached which will benefit both the sponsors and the bidders in the long-term.

Enhancing the incentive mechanism for officials

As a result of the requirements placed on municipalities to provide the necessary infrastructure to support the rapid GDP growth seen over the past 30 years, swift delivery of assets has often taken priority over ensuring long term value or service quality. Further, this need to procure quickly has been reflected in the assessment criteria for officials. Broadening the set of criteria on which officials are assessed (including consideration of procurement time, project whole life cost, risk allocation and environmental impact) could help secure long-term stable economic growth, and ensure the most effective use of public resources.

Organisational challenges

At the project level, a number of key changes, including those set out below, could further enhance the efficiency of the market:

Transparency of revenue risk

One of the biggest challenges for the private sector entering the water/ wastewater market is estimating future revenue growth risk.

Tariffs defined under standard Ministry of Construction BOT contracts are cost-plus, comprised of a cost element, adjusted regularly for CPI, as well as inflation in specific costs such as electricity, wages and key inputs (chemicals) plus a profit element.

However, securing the approval for tariff rises can be challenging. An example of this could be where there is a change of the local leadership within the municipality, and the new leadership requires a review of the water service provision strategy prior to authorising any increases.

The problem is exacerbated where the rate of waste water treatment is high. As waste water fees are charged to all customers no matter the actual level of wastewater treatment, the higher the level of wastewater treatment the smaller the amount of additional cash available to subsidise any shortfall between total tariff income and total charges paid to concession holders.

Due to the various financial and non-financial pressures on municipal utilities, it is very hard for bidders to assess the timing and extent of actual revenue.

One way to solve this would be for municipalities to guarantee the price increases. However, municipalities are currently prohibited from providing such guarantees.

Alternatively, clarity could be provided to both bidders and consumers alike by legislating that tariffs will be adjusted based on the affordability of the ultimate consumer rather than cost, for example by basing tariffs on a proportion of average GDP per head. This appears to represent a transfer of pricing risk to the private sector, however this may be attractive for both the private and public sectors.

This is because the structure not only increases clarity over revenue risk for the private sector, it also provides greater incentive to introduce more efficient operating methods and technology.

Further, for the public sector, adjusting tariffs based on affordability potentially avoids political problems of tariff rises, as it is fair and relatively easy to justify.

Transferring cash collection operations

Currently, cash collection from ultimate users is often performed by the municipal utility. Where this is performed inefficiently, it can inhibit the utilities' ability to meet its obligations under water/wastewater BOT contracts, as utilities often have little spare cash to fund any shortfall.

Where the private sector is used for managing cash collection (for example by outsourcing this task), it is relatively easy to introduce incentive structures to maximise overall collection revenue.

Furthermore, where the cash collection agent is also the manager of the water distribution network or WWTP, they can have much greater comfort over timing and completeness over tariff income.

Vertical integration

Significant increases in efficiency can be achieved by combining the operations of WTPs, distribution and WWTPs, resulting in economies of scale and improved quality management. Vertical integration can be implemented through the consolidation of existing concessions and also by extending the scope of new concessions. These approaches are starting to be seen in certain regions across China.

Horizontal integration

Significant operational efficiency gains can also be obtained through the central operation of plants, for example through the bulk buying of chemicals or equipment, or streamlining of staff.

Further, through the batching of projects it is possible to reach critical mass to access new funding sources (such as Hyflux listing 13 Chinese water projects on the Singapore Stock Exchange).

A potentially attractive option for the authorities would be to batch projects before going to market. This could reduce total bidding costs and attract quality operators which may not otherwise be interested in a single plant project.

Introduction of domestic funds

In 2007, pension insurance funds' scope of allowed investments was enlarged to include making deposits in large commercial banks and investing in long-term projects such as infrastructure projects. Commercial insurance companies were also recently allowed to invest in infrastructure projects.

However, as yet the bulk of this massive amount of cash has not been invested, due to a bottleneck resulting from the current requirement that every transaction must be approved by the China Insurance Regulatory Commission.

As a result of the near-guaranteed long-term product demand and regular cashflows, the water sector is an ideal investment for these insurance funds. Further, with a low cost of capital, insurance funds will potentially be able to provide both equity and debt funding to projects at market-leading rates, as they will not necessarily be restricted by the current PBOC lending rate requirements relating to bank debt.

When the domestic insurance firms start investing in earnest, foreign investors are likely to find it hard to compete.

Bond market development

A key pillar of economic reform in China is the development of an effective bond market in order to better allocate investment through more effective pricing of enterprise and project risk.

Although the short term bond market is growing quickly due to the recent appetite of firms to issue commercial bonds, medium and long-term bond trading is currently limited mostly to PBOC bonds.

The development of the municipal bond market will be an important step in the development of the capital markets as a whole. Further, municipal bonds will be instrumental in improving overall government budgeting as bonds will increase the transparency of municipal borrowing which currently occurs in a relatively unregulated manner, through subsidiary investment companies of municipal authorities. However, the introduction of a municipal bond market is probably at least a couple of years away, as major matters have still to be answered, including how to assess credit ratings, how underwriting will be performed and how these bonds will be regulated.

When municipal bonds are finally introduced they should represent an important new low cost funding source to municipalities, which will likely have a dramatic effect on how infrastructure is procured (water assets included) at a municipal level.

Summary: Outlook for foreign players

International investors face a short window of opportunity for investing in concession type structures, particularly in BOTs that are currently operating, prior to the ramping up of domestic insurance fund investment and, further off, the introduction of municipal bond funding.

For international operators, the market is likely to remain competitive, particularly for more attractive projects. However, it is quite likely that the government will move to address the high level of premiums which are currently restricting competition for the larger water distribution networks.

For international equipment providers, the new water quality requirements represent a major opportunity to rapidly expand sales of high-technology equipment.

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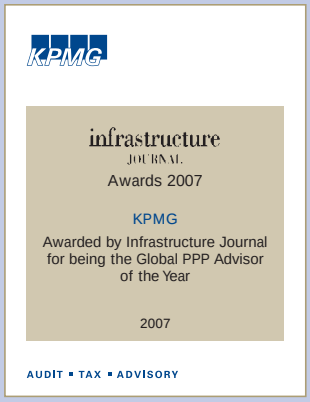

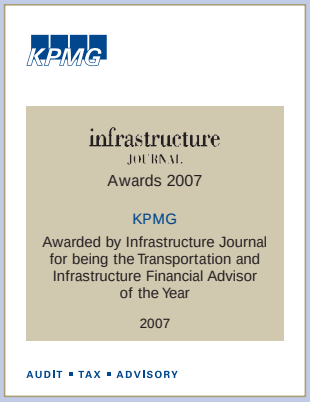

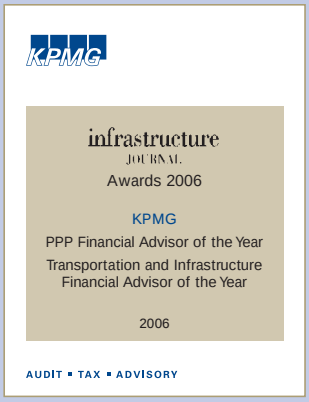

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