China Water Nexus

Uncovering China's Water Energy Nexus

Can Suez Environmental bring Chongqing Water International?

In last month's Global Water Intelligence, an article covered Suez Environment's involvement in Asia and its desire to take its Asian partners abroad. Charles Chaumin, president of Suez Environment Asia, mentioned in the GWI interview:

> "India and China will be a platform for us to export solutions to the region and elsewhere."

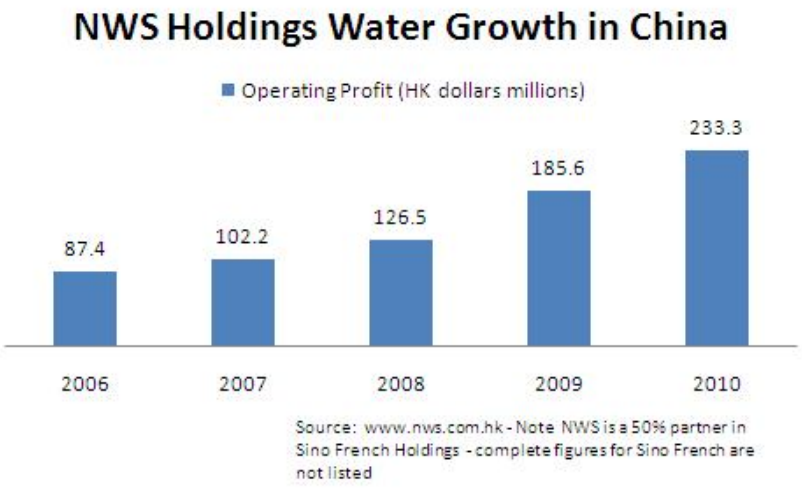
It is intriguing to envision an international water company (i.e. Suez Environment) partnering with a Chinese company to do a project outside of China. In this post, we look at the most logical company this could be: Chongqing Water, a Chinese State-owned enterprise. Suez Environment owns a 6.7% stake in Chongqing Water and has already done a number of joint projects together in China. In this post, we address the question: Can this partnership expand outside of China?

About Suez Environment:

When looking for leaders in China's water sector, Suez Environment is one of the key foreign players. Suez Environment China, which has its headquarters in Shanghai, includes Sino French Water **,** which manages the water business/contracts; SITA Waste Services; and Degremont , an engineering and solutions provider which offers technologies, design and construction expertise. Suez Environment's revenues in 2010 for the Asia Pacific were 781 million euros in 2010. This Asian figure does not include Degremont's China revenues (1.5 billion euros in global sales) and includes the company's Australia and Indonesia sales. An analyst report estimates that Suez Environment's Asia 2009 revenues were split as follows: China Water (31%), China Waste (11%), Australia Waste (46%), and Indonesia water (12%) (this figure did not include Degremont's China revenues). In 2008, Suez Environment mentioned that its revenues in China were 750 million euros, almost equal to the 2010 Asia-Pacific revenues, signifying that Degremont and its other non-Asian subsidiaries (Agbar) are a major earner in the region.

Sino French Holdings: NWS Holdings is Suez Environment's JV partner (50%) for Sino French Water Holdings. NWS currently operates over 60 projects in China and Hong Kong, focusing in four segments of Roads, Energy, Water and Ports & Logistics (These projects are listed in both websites of NWS and Suez Environment as they are both publicly listed. However, NWS' annual reports contain more disclosures on the operating profit for Sino French Holdings). Sino French Holdings has more than 20

water related projects, including a 13.4% stake in Chongqing water (paid $230 million in 2008). For the most part, these partnerships are trouble free, although there have been the occasional disputes.



Degrémont: Degremont is a global water solutions business with 2010 revenues of 1.5 billion euros. Thanks to an early start 30 years ago, the company already has 200 projects in China, currently averaging about 10 projects a year. Degrémont is known for its advanced technologies such as Aquasource (France – UF membrane), Ozonia (ozone and UV disinfection equipment), and Innoplana (Switzerland) sludge drying equipment.

Waste-water: Waste water projects include Beijing, Tianjin, and Xiamen. Recycled water projects include Shijiazhuang and Hefei. Industrial waste water projects include Shanghai and Chengdu (in partnership with its subsidiary Ondeo Industrial Solutions). The Chengdu plant will be able to recycle one third of the wastewater, which will be reused for the refinery process, saving the region's water resource.

Drinking Water: Drinking water projects include those in Hangzhou, Shanghai, and Urumuqi.

UV Solutions: Degremont has worked with the Beijing Drainage Group (including Qinghe WWTP, Jiuxianqiao WWTP and Bei Xiaohe WWTP), Shanghai, and Jiaxing using the Ozonia brand.

Membranes: Degremont specializes in ultrafiltration membranes in China. Some of Degremont's clients in China include a drinking water treatment plant in Nantong and Shanghai. The latter technology uses the CRISTAL process, which is a membrane process combining Ultra Filtration and PAC adsorption. The Shanghai government has been aggressive in its water quality efforts, and has begun closing inefficient water stations in exchange for more efficient treatment plants.

Sludge: Degremont's key patented sludge product is Innodry®2E. The company has used this technology in both Chongqing and Suzhou.

R&D: Suez Environment spent 73 million Euros globally on R&D in 2010. Although most of its R&D operations are in Europe (CIRSEE being its main center), there are a few key research centers in China that should be noted. These include:

SWRC – SCIP Water Research Center - A partnership started in 2006 between Sino French Water, Shanghai SCIP, Tongji University and East China University of Science and Technology. SWRC is working on using wetlands to treat waste water and new ways to reuse water.

Macao Water Lab – One of the top water laboratories in Greater China. One must think with Macao's relative small size and strong partnerships, this could be the region's first place to have a smart water system.

Tsinghua-SUEZ Educational Laboratory of Environmental Science and Engineering – This laboratory is located in the prestigious Tsinghua University. As we have noted in this blog before, many large companies do have partnerships with Tsinghua（including Veolia, Suez's biggest competitor). Aside from research purposes, these partnerships often serve as a recruitment/marketing tool to attract graduates.

Chongqing and Chongqing Water Group:

Chongqing is a 30 million person municipality in Western China, and one of the top 10 cities in terms of GDP in China. Chongqing is Suez Environment's key Western China operation, entering in 2002 with a contract to provide drinking water to the city's residents. Today, Suez is finding industrial water contracts a growth opportunity in Chongqing. This is because many multinational companies are choosing to move to Chongqing to either expand China's western market or to move away from the expensive Chinese seacoast. Companies such as Suez Environment can tap into their existing customers for service contracts. This includes chemical producer BASF, which plans to establish a facility in the Chongqing (Changshou) Chemical Industry Park.

Chongqing Water (SHA:601158)（was incorporated in 2001 and by 2009 had 28 water supply stations and 35 waste water plants. In the past 12 months the company saw close to $1 billion in revenues. All of the company's operations are in Chongqing. Some local analysts expect Chongqing Water to gradually expand to other Western provinces such as Sichuan, Guizhou, Hunan, and Hubei to expand its revenue base. The company's R&D abilities appear weak, with most of its efforts focusing on partnerships with Chongqing University and China Mobile. According to their prospectus, 64 of their 4,465 employees have graduate degrees. 60% of the companies' employees are above the age of 35, indicating that it appears very likely to be a strong SOE "top-down" culture.

Suez Environment and Chongqing water have a number of key partnerships in all areas of the water spectrum.

Full-service water: Starting in 2002, the two companies started the Chongqing Sino French Water Supply Co. (60% owned by Sino China and 40% by Chongqing water),

which provides water to Jiangbei, Yubei and the Northern Development Zone. In 2009, the two companies signed a new contract to construct and manage a plant providing full water services to the Yuelai District.

Industrial Water: In 2010, Sino French China did a JV with Chongqing Water and the industry park (45% Chongqing Water, 45% Sino China, 10%) to do industrial water services to companies based in the Chongqing Changshou Chemical Industrial Park.

Sludge: Chongqing Sino French Tangjiatuo Wastewater Treatment Company was established in December 2006. It is also the second largest wastewater treatment plant in Chongqing. The INNODRY 2E technology will reduce the Chongqing plant's sludge volume by lowering its water content from 75% to 10%. The product will also result in an energy savings of 30%-40%. After treatment, dry sludge can be used as an alternative fuel, instead of coal. In a recent company publication, Sino French mentions:

> Currently, Chongqing's sewage industry has shifted its focus from construction and planning to operations and management. As a result, many unforeseen problems and challenges have emerged. These include OPEX insufficiency; a municipal sewage collection system that combines sewage with rainwater; low sewage treatment rates and illegal industrial influent into the municipal sewage system.

Conclusion and Takeaways:

When thinking about Charles Chaumin's comment on whether "China will be a platform for us to export solutions to the region and elsewhere," one must wonder if he really needs a partner. With Suez Environment's superb R&D capability, the only partner they need is one with connections to customers and access to cheap financing (in order to scale at a faster rate). Although Chongqing Water has access to customers in Western China and likely cheap financing through SOE banks, this does not seem to be a compelling case to take the company abroad. None of the board for Chongqing Water, except for Stephen Clark, appear to have any international experience. In addition, one must wonder whether the NWS and Suez Environment partnership may be a conflict – as Suez Environment already is diluted 50% when it starts projects in China. The following are possible explanations:

1) Access to China customers abroad: This includes Chinese companies that require waste-water solutions abroad. One group would be companies that build factories in Africa, India, Central Asia, Russia, and Southeast Asia. The other group would be those Chinese companies that buy foreign companies needing water solutions.

2) Access to China development deals: China may pay for or provide cheap financing for a water treatment project in a favored country (like Africa), as long as the solution provider is a Chinese company.

3) Sludge Solutions Export: During the 11th Five-Year Plan (2006-2010), investment on sludge treatment was only 40% of that spent on wastewater treatment. China's sludge treatment rate is low (developed Chinese cities is only 20-25%). Because of Chongqing's proximity to the Yangtze River, the need for sludge treatment is even higher than other areas. In this scenario, Chongqing Water and Degremont could fund and develop a team of sludge experts to first provide solutions to the local and regional areas. They then could develop a niche solution that could take them to Southeast Asia and potentially India (currently Chongqing only has international flights to Thailand, Korea, Japan, and Singapore).

4) India: As the city of Chongqing prospers in the next 10 years, it could potentially be the hub between India and China. In this case, Chongqing Water and Suez could attract Indian companies needing water solutions in China.

The key drawback for Chongqing Water is R&D. Chongqing Water currently lacks the ability to come up with global water technologies. In the end, if the China market is all that Chongqing Water wants, this is not a big issue. But to expand globally with Suez, the company needs to bring something to the table. Aside from the above options, the company will either need to do some interesting acquisitions or seriously invest in R&D.

China Water Nexus believes the most likely opportunity will be in sludge solutions. Watch for further collaboration on this area between Suez Environment and Chongqing Water.

Using modern solutions like
girt chambers, Densadeg Clarifier Technology and the Ozone/Biological
Activated Carbon Process, the plant is expected to be amongst the
most technologically advanced in the Chinese water industry.

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