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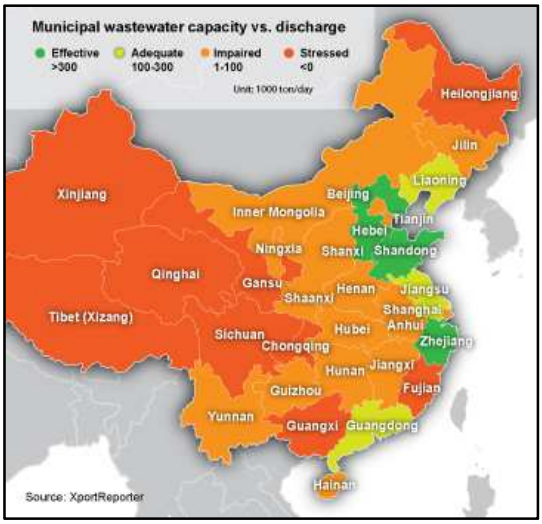
PROPRIETARY INTELLIGENCE

Smart water equipment and technology

China's nascent smart water industry presents opportunities for a slew of foreign companies



China's nascent smart water industry is already providing foreign companies business opportunities, multiple sources interviewed by this news service said. Water scarcity and design institutes' ability to build infrastructure quickly will only propagate export opportunities for foreign companies over the next 10 years, the sources said.

Smart water refers to technologies that enable the improvement of the efficiency of the water sector by reducing leakage, waste and theft. This includes two-way communications infrastructure, water meters, water networks, and irrigation infrastructure and analytics software.

By 2023, the global market for smart water technology and equipment will reach USD 46.5bn (CNY 284.7bn), and China will be the single largest market, according to the **Northeast Group**, a Washington, DC-based consultancy. The market for smart water infrastructure by 2023 in China alone will exceed USD 10bn (CNY 61bn), up from less than USD 500m (CNY 3.06bn) today.

"China is going to be an enormous market due to the pure size of the country," said Ben Gardner, president of the Northeast Group. "They're just getting started."

A slew of companies stand to benefit from growth in China's smart water industry including meter vendors such as **Texas Instruments**, **Itron**, **Aclara** and **Master Meter**; engineering software providers such as **Bentley Systems**; valve and other smart component vendors such as **Bermad**; smart grid professional services firms such as **Accenture**, **Cisco** and **IBM**; and large industrial technology companies like, **Siemens**, **Schneider Electric** and **CH2M Hill**.

Water scarcity sparks demand

The emergence of smart water infrastructure in China may help dampen the impact of the country's water shortages. Rising temperatures, rapid industrialization and overpopulation have exacerbated water scarcity issues in China in recent years. Earlier this year the central government published a report showing as many as 28,000 of the country's rivers have disappeared since the 1990s, and fewer than 23,000 remain. There are just 2,100 cubic meters of water for each person in the country, which is 28% of the global average. The average household in China loses over 21m cubic meters of water per year, or USD 1.19m (CNY 7.29m) per year, due to lacking water infrastructure, Gardner said.

Water meters in communication with a centralized control facility will allow utilities to measure and adjust water temperature, pressure and flow rate, marketing manager for Austin, Texas-based National Instruments Olivier Monnier said. In the last five years the US has installed over 1.2 billion mechanical flow meters with two-way communication capabilities, he said. China will soon catch up. Over the next several years, the Asia-Pacific region, and China specifically, is to become the world's largest consumer of flow meters, with a market compound annual growth rate of 10.5%, he said.

China will need more than just meters and communications technology to improve the efficiency of its water consumption. The country also needs equipment such as **Bermad**'s control valves, which enable precise water management on farms and at centralized treatment or distribution centers.

Bermad, an Israeli company, manufactures hydraulic control valves equipped with advanced flow control technology. The company, which has several subsidiaries in China, sells its valve to industrial irrigators, municipal water treatment facilities and industrial organizations, CEO of the company's China operations Ram Weingarten said. Bermad is one of the only vendors of smart control valves in China. To take advantage of new opportunities in China, the company is in talks to ally with electronic control system vendors. If it didn't have to construct its own control systems, the company could focus its efforts on refining its valve technology, a move that would ultimately improve its offering in China, Weingarten said.

The company sees immense opportunities in China's agriculture industry, marketing manager Ofer Cohen said. A method of irrigating crops known as drip irrigation requires agricultural companies manage pressurized water efficiently, which can only be done with control valves equipped with two-way communications technology, he said. Less than 10% of the country's irrigators use drip irrigation technology, and over 63% of the water consumed in China is put to agriculture-related end-uses, he said.

“China presents huge opportunities,” he said.

Bermad has made the most sales to projects in the Beijing and Guangdong areas. The majority of its customers in China are irrigators, though it does also make sales to international companies operating build order transfer (BOT) projects or municipalities, Weingarten said.
Since the smart water industry is relatively young, many technicians in China are unfamiliar with smart water technology, Weingarten said. This means his company has to spend valuable time educating and training its customers.

Smart water infrastructure also requires engineering, design and software expertise not typical of China. Exton, Pennsylvania-based Bentley Systems sells a range of software products that are used to perform water distribution analysis, mapping, hydrology engineering and analysis and for the design and build of water and wastewater treatment plants. The company’s products are used by most of China’s design institutes, marketing director Anne-Marie Walters said. It costs between a few dollars and several thousand dollars per day to license a given one of the company’s 300 software products, Walters said.

Design institutes’ multidisciplinary approach speeds up project implementation

In recent years, China’s design institutes have become more interested in water projects that involve two-way communications metering technology and advanced flow control solutions, Walters said. Additionally, Chinese government organizations are now interested in software that would allow analyzing the impact of the country’s water on the land.

Additionally, smart water infrastructure in China may develop faster than elsewhere because design institutes are highly effective project developers, Walters said. Bentley has had an easier time executing projects in China because design institutes enable communication between what are typically disjointed groups of engineers, contractors, subcontractors and equipment suppliers, she said.

“Every year, we see projects that have been done in record time, that have been constructed in record time, in China,” she said. “The design institutes pull disparate groups together; they organize everything so these projects take on a multidisciplinary approach.”

by Matthew Volkov in New York, and Xiao Wang in Hong Kong

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