Understanding Urban Water Tariff in the People’s Republic of China

Status of Urban Water Supply and Wastewater Treatment in the People’s Republic of China (PRC)

The PRC’s water supply and wastewater treatment has grown fastest and become the largest in the world. In 2000, 250 million urban residents (69% of total residents) could access portable water supplies while total domestic water consumption was 13.2 billion cubic meters (m³). In 2007, the served urban population increased to 350 million (94% of total residents) with total domestic consumption of 16.4 billion m³. In addition, the population served by portable water supply in counties was 102 million (81% of total residents) with total domestic consumption of 3.6 billion m³. Adding all these, the world’s largest population has access to a potable water supply.1

In 2000, 31 million m³ of wastewater was treated daily with an urban wastewater treatment ratio of 34%. In 2007, 62 million m³ of wastewater was treated daily with an urban wastewater treatment ratio of 63%, while 883 publicly owned wastewater treatment plants have a treatment capacity of 71 million m³ per day (the second largest in the world).2

Water supply institutional situation. From 1998 to 2007, water supply plants have been increased by 27%, from 1,450 to 1,852. From 2002 to 2007, the water production capacity increased from 122 million m³ to 154 million m³ per day where the water pipes increased from 194,000 kilometers to 336,000 kilometers. The leakage rose from 16.7% to 17.6% with the total amount of leakage of 6 billion m³ per year.3 The non-revenue water (NRW) increased from 4.9 billion m³ in 2002 to 8.7 billion m³ in 2007, which is the same scale of total urban water shortage in 2007. The unit water production cost has increased at a yearly average of 10% from 1998 to 2007.4

Existing Water Tariff.5 In 35 major cities6 in the PRC from 1998 to 2007, the water tariff increased yearly by 7.14%. By end-2008, the average water tariff in 35 major cities was around 2.4 yuan (CNY)/m³ for domestic usage including CNY0.7/m³ for wastewater treatment.7 Now, the water consumption expense in these 35 major cities is about 1% of total family income, much lower than the global level of 2%–5% of family income. From 2002 to 2007, the gross profit of water supply industry decreased from -CNY100 million to -CNY321 million. The net profit further decreased from -CNY190 million to -CNY596 million. Clearly there is an urgent need to adjust water tariffs in the PRC.

Current Status of the PRC’s Water Tariff Adjustment

Water tariff increase trend. Many cities have increased or are increasing the urban water tariffs by CNY0.3 to CNY0.6 CNY/m³ since the beginning of 2009, including the largest cities such as Beijing, Shanghai, Tianjin, Guangzhou; second largest cities as Nanjing, Shenyang, and Lanzhou; and third-tier cities, like Luoyang. Reasons given by the city price authorities include: the existing water tariff is too low to fully cover the water production cost, last year’s high consumer price index (CPI) hindered their plan on increasing water tariff earlier, and to promote water conservation in urban areas. However, the tariff increase trend was generally met with negative public reaction.

Public response to the water tariff increase. The people are not convinced by the reasons provided by the authorities and water companies; they believe that there are other forces behind it:

• Non-economic factors. People believe that the foreign private companies operating in the water industry have caused the water tariff to go up to cover their investment cost and make profit. Foreign companies have been involved in the water industry by winning the competitive build-operate-transfer (BOT) biddings 10 years ago. Now they have been operating about 10% of all urban water supplies in the PRC, but focus on

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2 According to the World Bank, none of the 35 Indian cities with a population of more than one million distribute water for more than a few hours per day, despite generally sufficient infrastructure. Owing to inadequate pressure, people struggle to collect water even when it is available.
3 According to Dr. Fu Tao from Tsinghua University Water Research Centre, the actual leakage ratio is doubled.
4 Urban Water Supply Statistic Yearly Report, MOHURD.
5 The water tariff mentioned in the paper covers wastewater tariff.
6 The major cities in the PRC comprise four provincial-level cities, all capital cities in provinces, and five cities which are separately listed in the State Plan.
The water tariff should be adjusted considering six aspects: and Reform Committee (NDRC) and MOHURD. It focuses on state security against foreign control in a monopoly industry that provides essential public service. These two points may eventually have a wide impact on foreign-involved public–private partnerships in the water sector. The Ministry of Housing Urban Rural Development (MOHURD) even sent a research group to Lanzhou to investigate the water tariff increase issue and the water supply state but came back with no hard facts to support the foreign conspiracy theory.

- Economic factors. People also blame the high operational cost and high salary of staff in water supply companies. It was said that the average staff salary in a water supply company is 20% higher than other industries. Low operational efficiency and high NRW in some water supply companies is also identified as one of the reasons for water tariff increase. (Fu Ta, 2009).

Specialists’ comments. Fan Mingyuan, a water expert from the World Bank, compared the PRC water tariff level with the world level and found that the PRC’s level is lower than the world average. Jin Yongxiang, an expert in water industry BOT, pointed out that the water tariff has been increasing since the 1990s, long before foreign companies started to be involved. Some experts also highlighted the existing low water tariff will damage the sustainability of the PRC’s water industry development and worsen the water shortage in urban areas if nothing is done.

Government’s response. Notice of urban water tariff management was issued on 23 July 2009 by National Development and Reform Committee (NDRC) and MOHURD. It focuses on six aspects:

• purposes of tariff adjustment. The water tariff should be adjusted gradually to encourage water conservation and water use efficiency. Low wastewater treatment fee should be targeted first to fund wastewater treatment processes and control water pollution.

• follow the official process of tariff adjustment. Water tariff should be audited and heard to ensure transparency in water cost calculation. The water companies should control the staff salary scale and reduce the NRW and losses from water leakage.

• set proper tariff charging system. Raising block water tariff should be introduced to encourage water conservation. Water charge should be introduced to municipal facility water consumption such as landscaping and environmental cleaning.

• optimize the tariff structure. The water tariff structure should be simplified into three categories—domestic, non-domestic, and special usages. The wastewater tariff should be prioritized when it is too low, while the tariff for reusable water should encourage reusable water industry development and usage.

• ensure that the poor are adequately protected from water/wastewater tariff increases.

• carry out public awareness and education toward a better understanding and acceptance of the water tariff reform.

Conclusion: the provincial and municipal price bureaus who are in charge of adjustment of the water tariff should enhance coordination with local authorities to ensure the water tariff adjustment process is carried out smoothly and on time.

ADB’s concerns. Since 1992, the Asian Development Bank (ADB) has invested in the PRC’s seven water and wastewater treatment loan projects and other 20 loan projects comprising water or wastewater components, with the total loan amount of $2.5 billion. To achieve full cost recovery and sustainable operation, ADB always encourages the local authorities to raise water tariff gradually and steadily when ADB finances the water projects, which is in line with the government’s guidelines. However, the present strong public disagreement will make it difficult for the PRC to achieve full cost recovery including the capital investment and operation and maintenance. In partnership with the Government, ADB can help the PRC improve the local public awareness to achieve a smooth water tariff reform.

Furthermore, the World Bank did a trend study to investigate if private sector participation improves performance in electricity and water distribution. Based on the initial analysis of the available data, the study finds no indication of tariffs moving closer to cost-recovery levels under the private sector operation, which deserves further attention from both researchers and reformers.

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8 For example, Veolia obtained 45% ownership of a Lanzhou water supply company with a bidding price of CNY1.7 billion, four times the base price of CNY0.4 billion; Veolia spent CNY0.95 billion for 50% ownership of a Haikou water supply company, thrice the base price of CNY0.31 billion and CNY2.18 billion to grasp 49% ownership of a Tianjin water supply company, two times more than the base price of CNY0.7 billion. A branch company of Suez company spent CNY0.8 billion for 49% ownership of a Yangzhou water supply company, much more than the base price of CNY0.18 billion.

9 Non-domestic covers industry and public buildings and facilities; special usages mean the water for car-washing, saunas, and others involving high water consumption.