

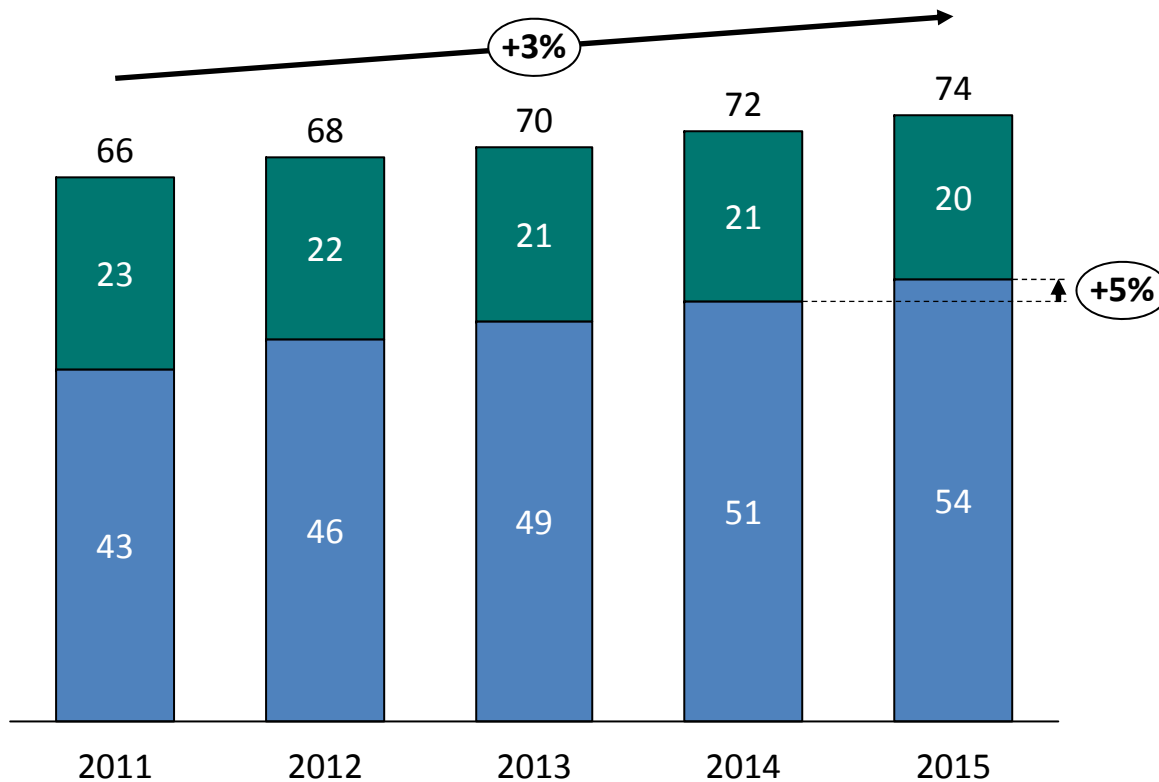
China Wastewater Treatment Market Brief

Prepared by: PIM LTD.
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China's total discharge of wastewater had reached 74 billion tons in 2015, with a 3% Compound Annual Growth Rate (CAGR) over the previous 5 years

China Wastewater Total Discharge*, 2011~2015 (Billion Ton)¹

Industrial Wastewater Discharge
Municipal Sewage Discharge

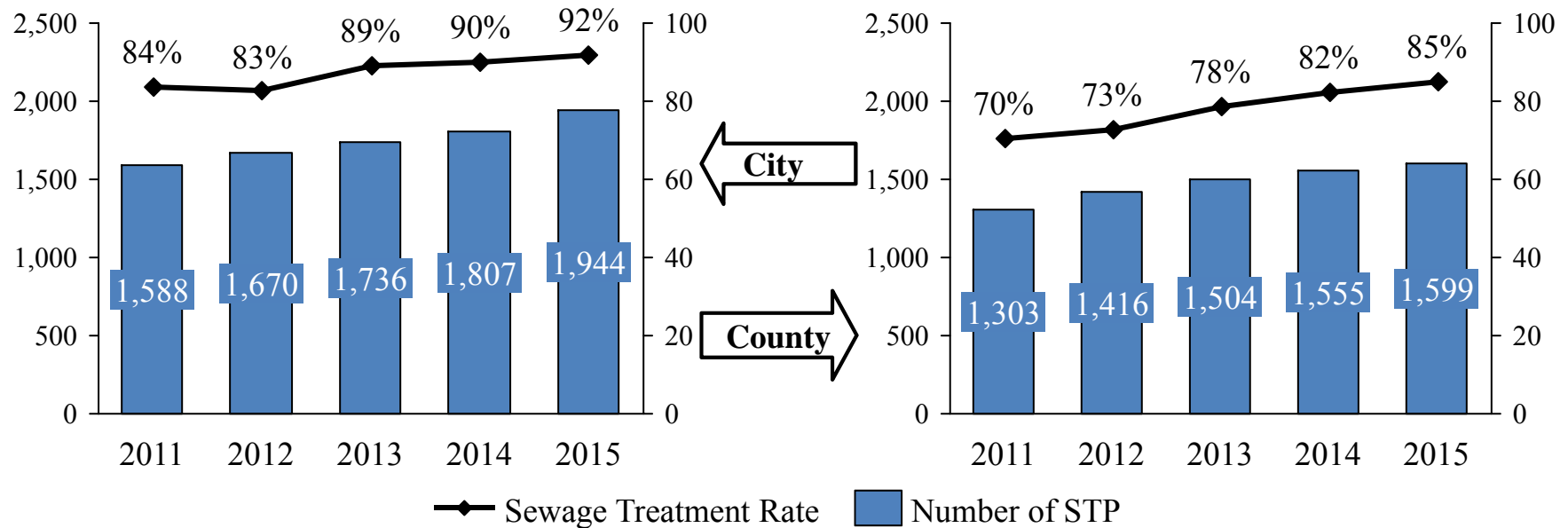


- China's total wastewater discharge is gradually increasing at a 3% CAGR during 2011~2015.
- Among it, industrial wastewater is steadily declining due to China's efforts of "circular economy" to reduce industrial emissions.
- While municipal sewage discharge is growing by 5% annually.
- In 2015, China's total wastewater discharge reached 74 billion tons, 72% of which was municipal sewage.

Note: * Wastewater total discharge = Industrial wastewater discharge + Municipal sewage discharge
Source: 1. Ministry of Environmental Protection of the People's Republic of China

There were 3,543 sewage treatment plants in cities and counties in China; The Sewage treatment rate of China urban and county areas are aimed to reach 95% and 90% by 2020

China Sewage Treatment Plant & Sewage Treatment Rate, 2011~2015 (Unit & Percentage)¹



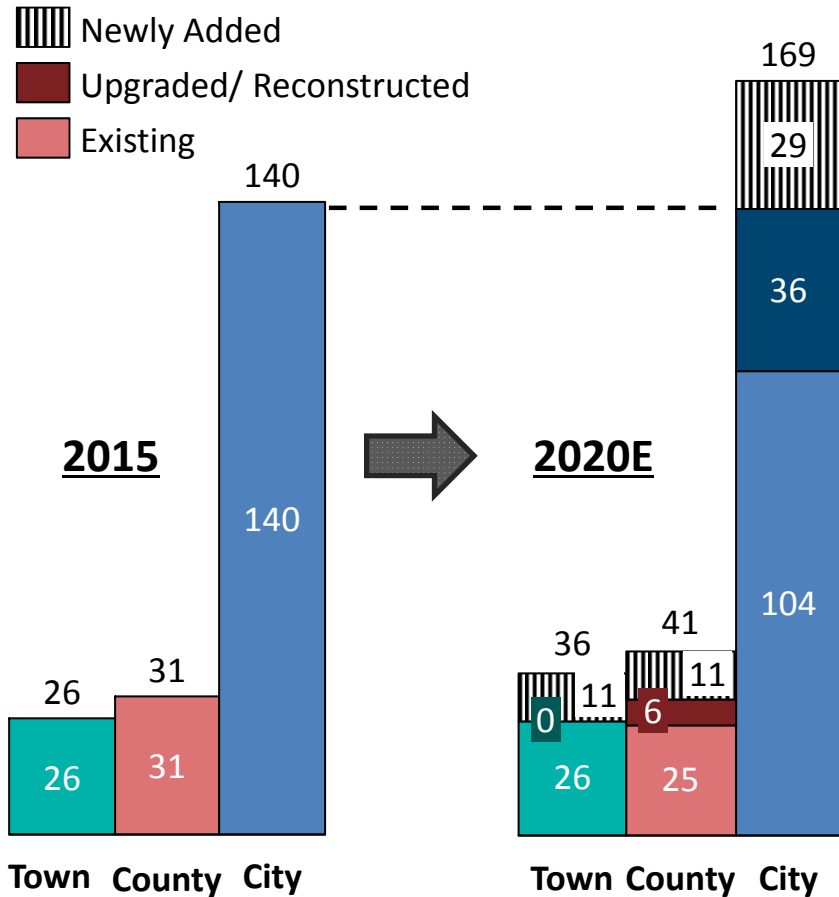
- There were altogether 7,021 sewage treatment plants in China by the end of 2015. Among them, plants in city and county accounted for 50.5%.
- By the end of 2015, China’s urban sewage treatment facilities have reached a city sewage treatment rate of 92% and county sewage treatment rate of 85%, which are aimed to reach 95% and 90% by 2020.

Source: 1. National Development and Reform Commission of the People’s Republic of China

China plans to invest 23 billion USD in sewage treatment facilities to add 48.90 million m³/day of sewage treatment capacity and upgrade 40.53 million m³/day by 2020

China Sewage Treatment Facility Capacities¹

(Million m³/ day)



Government Investment

- According to *The 13th Five-Year Plan on China's Urban Sewage Treatment and Recycling Facilities Construction* that was issued in December 2016 by Chinese government, the total investment in the next five years for urban sewage treatment construction is estimated to be \$84.5 billion USD, including \$17.3 billion USD of newly added sewage treatment facilities and \$5.7 billion USD for upgrading and reconstruction of sewage treatment facilities.

Newly Added Capacity

- During the next five years, the Chinese government plans to build new facilities and add 50.22 million m³/day of sewage treatment capacity.
- By 2020, towns and counties would be added about 40% more capacities compared to 2015, while cities with already huge capacities, would be added 21% more.

Upgraded/Reconstructed Capacity







- During the next five years, current facilities that are below standard would be upgraded and reconstructed, whose total scale is planned to be 40.53 million m³/day.
- Upgrade and reconstruction would concentrate in county and city, where about 25% of current facilities would be raised up to standard.

Source: 1. National Development and Reform Commission of the People's Republic of China



The Action Plan for Prevention and Control of Water Pollution, known as “Ten Water Rules”, was released by The Chinese State Council in 2015 and set clear goals and actions by 2020, 2030, and 2050

Main Goals:

➤ **Phase I – By 2020**

Key River Basins  Qualified water > 70%	Coastal waters  Qualified water ≥ 70%	Cities  Qualified drinkable water > 93%
Nationwide  Poor groundwater ≤ 15%	Cities  Black and odorous water < 10%	Three Economic Areas*  Aquatic environment is improved

➤ **Phase II – By 2030**

Key River Basins  Qualified water > 75%	Cities  Qualified drinkable water > 95%	Cities  Black & odorous water is basically dispelled
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➤ **Phase III – By 2050**

The Ecosystem  In benign cycle
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Practical Actions to Achieve The Goals

No.	Actions
1	Fully control pollutant emissions
2	Promote transformation and upgrade of the economic structure
3	Actively save water resources
4	Strengthen science and technology support
5	Give full play to the markets
6	Strictly supervise the enforcement of environmental laws
7	Effectively strengthen the water environment management
8	Ensure the safety of water ecological environment
9	Specify and implement the responsibilities of all parties
10	Strengthen public participation and social supervision

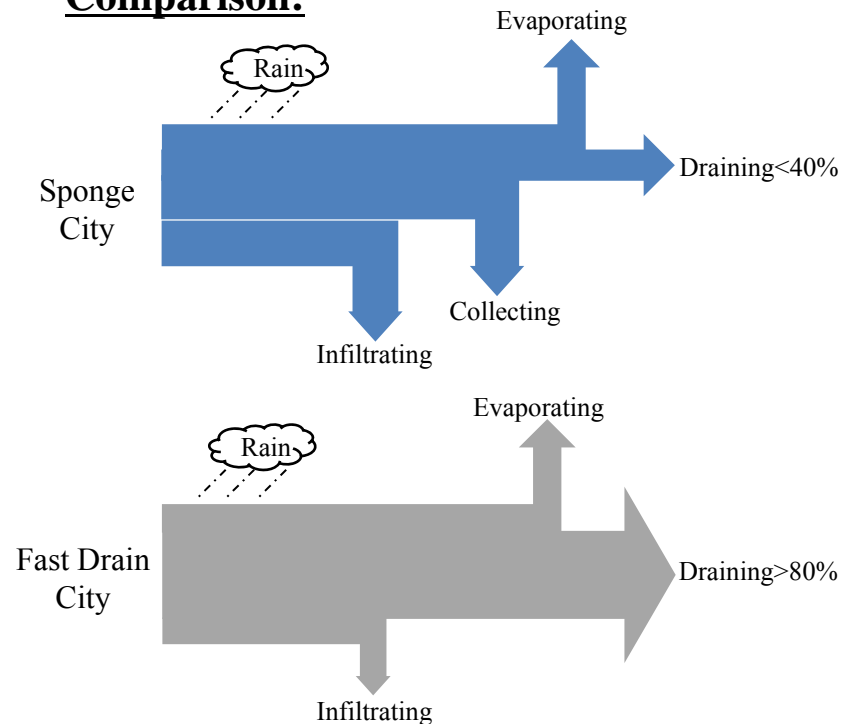
Note: * Beijing-Tianjin-Hebei, Yangtze River Delta and Pearl River Delta

Sponge Cities, which were brought up in 2012 and caught highly attention from the president Xi, will stimulate construction of drainage systems

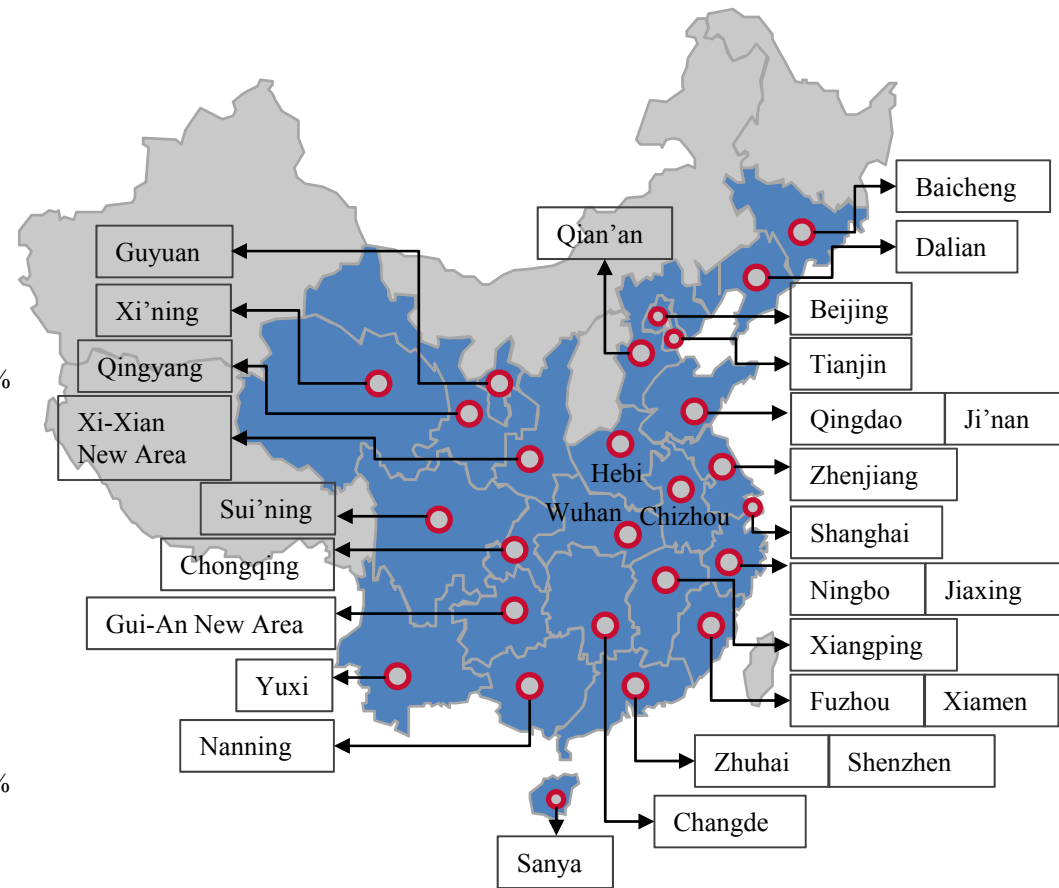
Definition:

- Sponge cities are aimed to build up infrastructure for collecting excess rainfall and integrating flood control.
- As a result, cities will be able to both deal with flood and drought like a flexible sponge.

Comparison:



Geographical Distribution of 30 Pilot Sponge Cities in China¹



Source: 1. PIM research and analysis



Thank you!

谢谢!



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