

INDUSTRY OVERVIEW

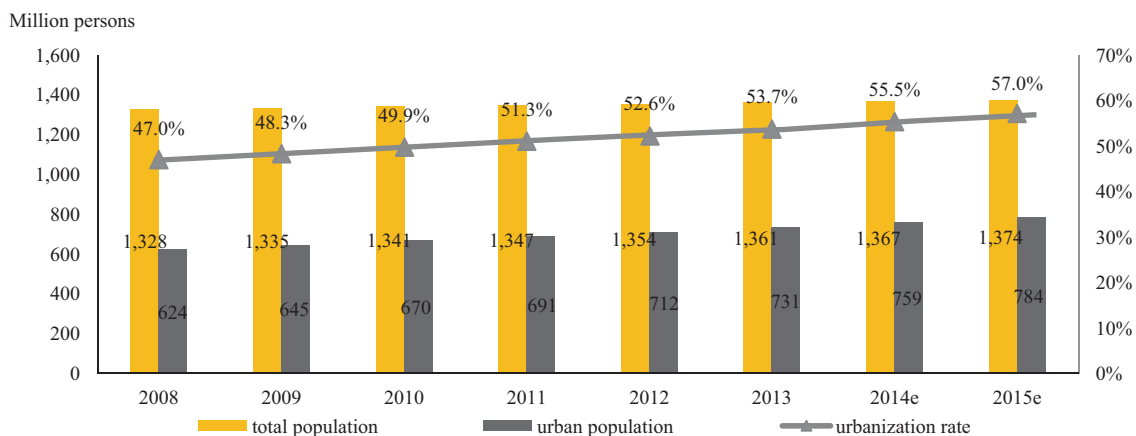
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OVERVIEW OF CHINA'S ECONOMY

China's economy has enjoyed continuous and steady growth since 2008. In 2013, China's GDP reached RMB56,885 billion, equivalent to RMB41,796 per capita. China's real GDP grew moderately in 2013 at 7.7%, which was 1.3% lower than in 2012. The real GDP growth rate is expected to remain between 7% and 8% from 2014 to 2015.

China's urbanization continues in line with the steady increase in population and economic growth. From 2008 to 2013, China's population grew steadily at 0.5% per year and urbanization continued. By the end of 2013, China's population reached 1,361 million and is expected to reach 1,370 million by 2015. In 2013, China's urban population reached 0.73 billion, representing an urbanization rate of 53.7%, 1.1% higher than the urbanization rate in 2012. From 2008 to 2013, China's urbanization rate grew steadily at a compound annual growth rate ("CAGR") of 2.7%, and the urbanization rate had exceeded 50% by the end of 2011. China had over 650 cities in 2011, including prefecture-level cities and county-level cities, of which approximately 500 were small or medium-sized cities.

China's population and urbanization rate, 2008-2015



Source: National Bureau of Statistics of China, World Bank, EY Advisory

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OVERVIEW OF CHINA'S MUNICIPAL SOLID WASTE TREATMENT INDUSTRY

China's Municipal Solid Waste

Solid waste can be divided into three main categories according to its source: municipal solid waste, industrial waste and agricultural waste. Municipal solid waste is the largest category of solid waste and its volume has been increasing steadily in recent years. The reason for the rapid increase in municipal solid waste lies primarily in China's rapid economic development and urbanization. In addition, improvements in living standards and increases in population and consumption levels have also significantly affected municipal solid waste volume and composition.

China's municipal solid waste mainly consists of kitchen waste, which is characterized by high organic matter content, high moisture, high ash content and low calorific value. While the average calorific value of China's municipal solid waste is 4,200 kilojoules per kilogram (kJ/kg), calorific values differ across provinces and cities due to varying levels of economic development, with the calorific value of municipal solid waste in the most developed areas being approximately 3.6 times of that in underdeveloped areas. In recent years, the average calorific value of China's municipal solid waste has been increasing as a result of increasing use of gas in northern China, rising consumption and the growing proportion of paper, plastic, glass, metal, fabric and other recyclable materials in municipal solid waste. Waste with higher calorific value produces more energy when incinerated and is thus more suitable for WTE processing.

Solid waste categories

Sources of waste	Categories		Composition
Houses and apartments	Municipal solid waste	Regular household trash	Kitchen waste, packaging waste, fecal residue, ashes, green waste and special waste
Roads, streets, pavements, alleys, parks, amusement parks and seashore		Cleaning garbage	Sweepings (e.g., leaves, soil, sediment, animal carcasses, water lettuce), green waste and special waste
Shops, restaurants, markets, offices, hotels, printing plants, garages, hospitals and organizations		Commercial waste	Food waste, packaging waste, animal carcasses, ash, construction waste, green waste, special waste
Water purification plants and sewage plants		Other waste	Sludge
The construction or destruction of industrial plants, mineral plants and power station	Industrial waste		Construction waste, scraps, debris, waste plastics, waste chemicals, sludge, tailings, packaging waste, green waste, special waste
Fields, farms, forestry, livestock farms, dairy farms and ranches	Agricultural waste		Agricultural resources waste, crop waste, fecal residue, animal carcasses, green waste and special waste

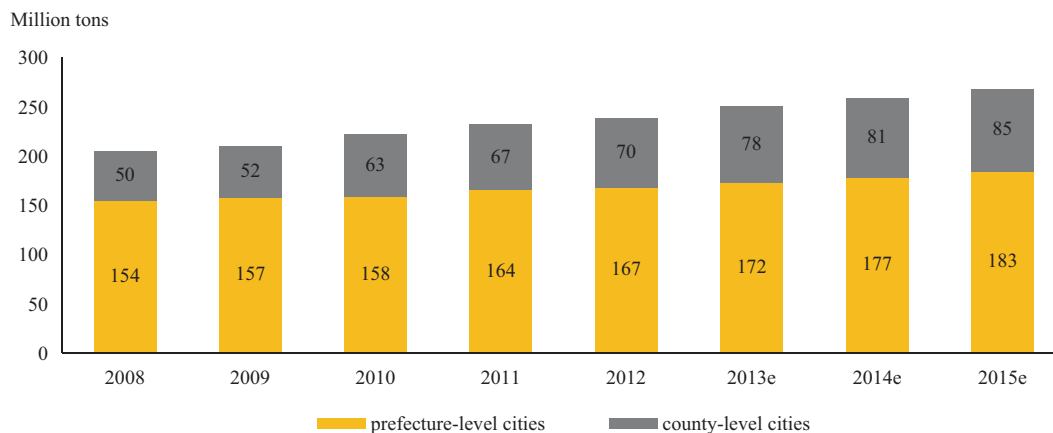
Note: Special waste includes large appliances, large furniture and hazardous wastes that are toxic due to flammability, exclusivity, radioactivity, chemical reactivity or pathogenicity. Based on treatment methods, solid waste also can be divided into medical waste, construction waste, industrial waste and municipal waste (including urban and rural). Medical waste and industrial waste need separate collection and treatment due to their nature.

From 2008 to 2012, the municipal solid waste volume in China grew steadily. The growth rate in prefecture-level cities has been relatively modest with a CAGR of approximately 2% and is forecast to continue increasing at a rate of approximately 3% in the next 3 years. The waste in county-level cities (typically small and medium-sized cities) has been growing at a CAGR of approximately 9% in the past five years, reaching

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70 million tons in 2012 and forecasted to reach 85 million tons in 2015. Future growth in the Chinese waste treatment market is expected to come from small and medium-sized cities due to the high growth in waste generated there.

Municipal solid waste produced in prefecture-level and county-level cities, 2008-2015



Source: China Urban-Rural Construction Statistical Yearbook, EY Advisory

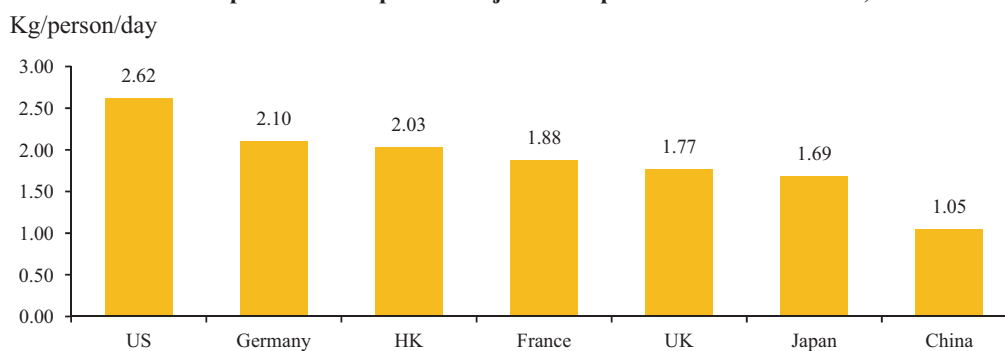
In addition, rural areas are also an important source of municipal solid waste in China, generating 280 million tons of municipal solid waste in 2012. Currently, there are approximately 40,000 townships and 600,000 administrative villages without established environmental protection infrastructure, resulting in large amounts of waste remaining uncollected. In rural areas, the volume of waste collected and transported is approximately 57 million tons per year, of which the volume of waste treated is 35 million tons per year while the remaining amounts were not properly treated and merely piled up in open areas. Waste collection and treatment facilities are expected to gradually increase as urban areas expand and rural areas develop, creating opportunities for growth in rural municipal solid waste treatment.

China's Municipal Solid Waste Treatment Market

Waste treatment market

Due to differences in economic development, level of industrialization and living standards, per capita waste output in the U.S. and Germany reached 2.6kg and 2.1kg per day, respectively, as of December 31, 2013, while China had a per capita waste volume of 1.1kg per day as of the same date, ranging between 0.9-1.2kg per day in cities and 0.9kg per day in rural areas, generally lower than in more developed countries.

Per capita waste output for major developed countries and China, 2013

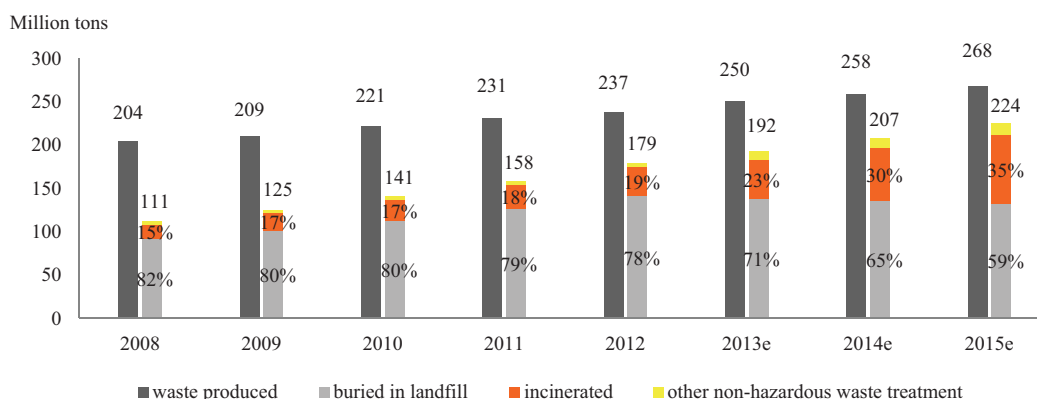


Source: World Bank

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As of December 31, 2012, total treated municipal solid waste in China's cities was approximately 179 million tons, of which 34 million tons, or approximately 113,380 tons per day, were incinerated. Due to market demand and government policies, China's municipal solid waste treatment system in cities are expected to change over the next 5 to 10 years. According to the Twelfth Five-Year Plan, the proportion of waste treated by sanitary landfills is expected to gradually decrease to 59% by 2015 (from 80% in 2010) while the proportion of waste treated by incineration is expected to gradually increase to approximately 35% of total waste treated by 2015 (from 17% in 2010). Further, the amount of waste being treated is expected to account for approximately 84% of total municipal solid waste produced in 2015 as compared to approximately 64% in 2010.

Municipal solid waste produced and treated in China's cities, 2008-2015



Source: China Urban-Rural Construction Statistical Yearbook, EY Advisory

Note: Non-hazardous waste treatment refers to the use of physical, chemical or biological treatment of contaminated matter to prevent permitted hazards posed to the health of human beings, animals and the environment.

Waste treatment methods

Landfills, incineration and composting are the three main methods of waste treatment. Treatment of waste in a landfill involves burying and compacting the waste, allowing it to decompose. Waste incineration involves combustion of waste in a furnace to reduce its volume. Composting is a biological process in which the organic portion of waste decomposes under carefully controlled conditions, producing fertilizer as a final product. Each method has advantages and disadvantages. The choice of method to be implemented in a given area generally depends on local waste composition, economic development, geographic location and the environmental consequences of converting the waste to energy in the form of electricity or heat.

Compared with other municipal solid waste treatment technologies, incineration has the following advantages:

- Reduces the volume of solid waste: The incineration process reduces the volume of solid waste by 80% to 90% (compared to a reduction of 60-70% for composting and minimal reduction for landfills);
- Completely eliminates pathogens: The harmful components in waste are broken down completely at high temperature, and incineration is the only efficient way to eliminate flammable carcinogens, viral contaminants and toxic organic substances;

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- Reduces or eliminates the environmental impact of subsequent treatment processes: Incineration greatly reduces the pollution concentrations of landfill leachate and releases the combustible and malodorous components from the gases;
- Utilizes municipal solid waste efficiently: The energy of high temperature exhaust gas generated during the process can be transformed into power generation or steam for heating;
- Operates efficiently: Incineration facilities generally require less area than landfills and can be constructed near urban areas, which in turn may preserve land resources and reduce transportation distance for waste to reach the treatment facility.

The development and application of incineration technology is relatively mature among developed countries. In particular, Japan incinerated 84% of its municipal solid waste in 2011 and has been striving to improve its incineration technology due to limited land resources. Many European countries are also at the forefront of incineration technology development. By the end of 2011, the proportion of waste treated by incineration in Denmark, Switzerland and Sweden all exceeded 40%. As at the end of 2012, less than 20% of China's municipal solid waste was incinerated while landfills of municipal solid waste was the primary waste treatment method in most cities. However, with landfills facing serious resource limitation, incineration is considered to be the most efficient method for waste treatment and is expected to become the mainstream of the waste treatment industry in China.

OVERVIEW OF CHINA'S WTE INDUSTRY

WTE Market

Waste power generation includes waste-to-energy (“WTE”) and landfill gas (“LFG”) power generation. The former type is currently predominant in China. As of December 31, 2012, the number of WTE plants in China reached 131, with a total installed capacity of 2,600MW, while the number of LFG power stations was 50, with total installed capacity of only 100MW. On average, installed capacity of each LFG power station is approximately 10% of that of each incineration power plant.

China's WTE industry started in 1986 with the construction of the first WTE plant in Shenzhen. Local governments did not begin to focus on the WTE industry until 2001. From 2001 to 2005, approximately one-third of China's provinces and municipalities established their first WTE plant, representing the first wave of China's WTE plant construction. Our Group is one of the pioneer companies in China's waste power generation industry, adopting the use of advanced foreign technology and optimizing the technology to meet local requirements.

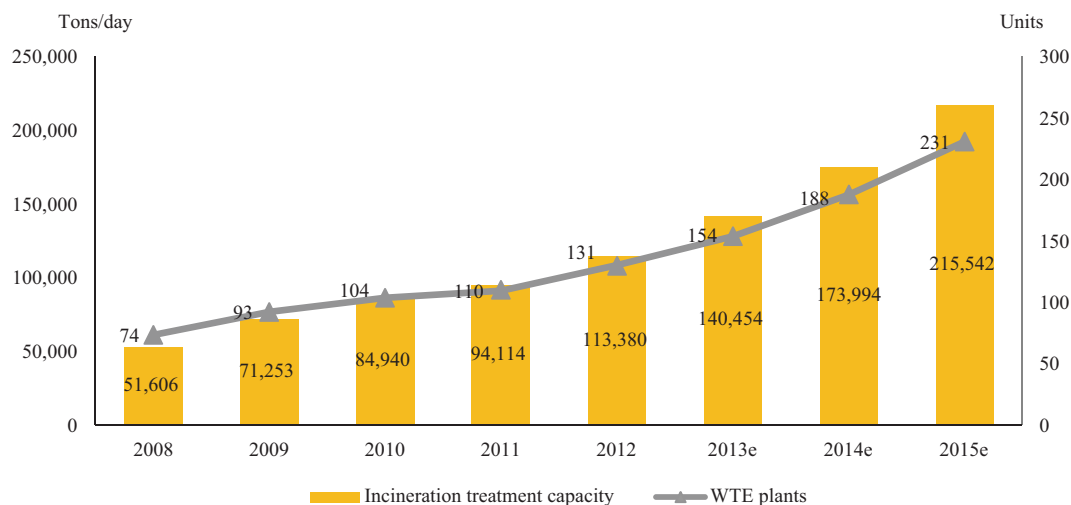
Stimulated by government policies under the Eleventh Five-Year Plan on Waste Treatment in 2007, the volume of municipal solid waste incinerated in China increased by 30% from 2008 to 2009. However, public oppositions by local residents against the construction of incineration plants have slowed down the industry development since 2009.

As a result of increased popular understanding of the WTE industry, as well as promotional effects brought about by the “National Plan for Establishing Facilities for Treatment Of Urban Household Waste in a Non-Hazardous Way under the Twelfth Five-Year Plan” (the “Plan”), China's WTE market has been growing in

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recent years. According to the Plan, the proportion of total waste treatment capacity allocated to incineration is targeted to reach 35% of all waste treatment in 2015. Based on this target, it is estimated that the incineration capacity in China's cities will be increased to 215,542 tons per day by 2015, representing a CAGR of 23.9% between 2012 and 2015. Particularly, as landfills remain the primary waste treatment method in county-level cities (incineration capacity and treatment volume in those cities were only approximately 7% of total treatment capacity and volume from 2008 to 2011), the proportion of waste incinerated is expected to grow substantially by 2015 in order to meet the targets set by the Twelfth Five-Year Plan.

Incineration treatment capacity and number of WTE plants in China's cities, 2008-2015



Source: National Bureau of Statistics of China, "National Plan for Establishing Facilities for Treatment Of Urban Household Waste in a Non-Hazardous Way under the Twelfth Five-Year Plan", EY Advisory

The increase in incineration capacity has resulted from an increase in the number of waste incineration plants and increasing capacity per plant. In China, the number of WTE plants increased from 74 in 2008 to 131 in 2012, representing a CAGR of 15.3%. At the same time, capacity per plant also increased.

WTE plants in China are mainly located in developed coastal areas, such as the Yangtze River Delta region, Bohai economic rim and Pearl River Delta region. In 2012, most of the 131 operating WTE plants were located in eastern China, with most of them located in Jiangsu province (27) and Zhejiang province (22).

In 2012, the majority of newly operational projects were located in eastern China, especially Zhejiang province where 6 WTE plants commenced operation in 2012. There is significant demand for waste treatment in China's coastal areas, where the economy is more developed and urbanization is more advanced. Aside from these economic and technological advantages, the coastal area is prioritized for waste power generation development due to its suitable conditions. In northwest China, the WTE industry is still in the early stages of development, with landfills remaining the primary method for waste treatment.

A total of 21 WTE projects commenced operation in China during 2012, representing a total waste treatment capacity of 18,950 tons per day, among which 18 projects utilized grate incinerator technology and 3 utilized circulated fluidized bed technology. Based on statistics provided by waste incineration companies, a majority of the WTE projects under planning or construction after 2012 have chosen to adopt grate incinerator technology, which suggests that grate incinerator technology will be the mainstream technology for WTE projects in the future.

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Regarding the contemporary industrial environment and political structure of China, the BOT model is the most widely adopted industry norm for WTE plants. Local governments turn to WTE companies for both the capital investment and industrial expertise necessary to construct and manage the operation of incineration plants, while still maintaining a degree of supervisory control over the plants. After approximately 20 to 30 years of operation, the company that has built and operated the project returns the operational rights to the local government.

In general, equipment, construction and installation services are major components at construction stages, and these costs fluctuate based on the time and location of the project. When a WTE plant is in operation, there is minimal cost for raw materials as municipal solid waste are generally supplied by the local administrative authorities who pay the operator of the WTE plant a fee for handling and treating the waste.

Major policy drivers of the Chinese waste incineration industry

Cities with large populations and scarce land resources and cities in the developed areas, for example eastern China, are adopting incineration technology and reducing their use of landfills. Other areas with suitable conditions can adopt incineration technology through regional co-construction or capacity sharing. This continued development of the waste incineration method is driven by favorable government policies.

The Twelfth Five-Year Plan. According to the Twelfth Five-Year Plan, total incineration treatment capacity in China is targeted to more than double the 2010 level by 2015, equivalent to a CAGR of 28%. Meanwhile, landfill treatment capacity is targeted to increase by approximately 50% from 2010 to 2015, equivalent to a CAGR of approximately 8%. According to the Twelfth Five-Year Plan, incineration treatment capacity as a proportion of total waste treatment capacity is targeted to increase from 20% in 2010 to 35% in 2015, while the proportion allocated to landfill treatment is expected to decrease from 77% in 2010 to 59% in 2015.

Waste Treatment Fee. Waste treatment fee standards are set by local governments and vary significantly from one area to another. For example, waste treatment fee for certain provinces or cities such as Beijing and Guangdong could go beyond RMB100 per ton, while some other provinces or cities such as Hainan could be as low as RMB40 per ton. On average, the waste treatment fee for major provinces ranges from RMB50 to RMB100 per ton. However, with the rising importance of national environmental protection policies, waste treatment fees are expected to increase in order to promote the development of the WTE industry in China.

However, China is still far from reaching the subsidy standards of more developed countries. For example, in the Netherlands, Amsterdam compensates Euro 160 (equivalent to approximately RMB1,340) to waste treatment companies for every ton of waste treatment and the average subsidy level in the U.S. is US\$56 (equivalent to approximately RMB350) per ton.

On-grid Price Standard. On-grid price historically has been set at the provincial level. On March 28, 2012, the NDRC issued the “Notice on Improving the Pricing Policy of Waste Incineration Power Generation”, which specified that from April 1, 2012, all WTE projects approved after January 1, 2006 would benefit under the new on-grid pricing policy with a unified national benchmark on-grid price of RMB0.65 per kWh (VAT inclusive), subject to certain conditions and receiving approvals from relevant authorities, compared to the previous policy which added RMB0.25 per kWh to the standard tariff given to local coal power plants.

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The above-mentioned on-grid pricing policy set by the NDRC is more favorable to WTE plant operators than most of the original provincial waste power generation subsidy programs, except for those in Guangdong, Zhejiang and Shanghai, which had an on-grid price of more than RMB0.65 per kWh (VAT inclusive).

In addition, the above-mentioned on-grid pricing policy specifies a ratio of 280kWh of electricity generated for every ton of waste received, which is designed to prevent potential abuse of the policy by companies adding extra coal in the power generation process to obtain additional tariff subsidies. Specifying the ratio between power generated and waste treated is expected to benefit waste incineration companies which have their own research and development technologies.

Tax Incentives. To encourage development of the environmental protection industry and particularly the waste treatment industry, a number of tax incentive policies have been promulgated providing beneficial income tax and VAT to relevant enterprises in the environmental protection industry including “PRC Enterprise Income Tax Law Implementation Regulations” (《中華人民共和國企業所得稅法實施條例》), “Notice on Value-added Tax Policies on Comprehensive Utilization of Resources and Other Products” (《財政部、國家稅務總局關於資源綜合利用及其他產品增值稅政策的通知》) and “Notice on Preferential Income Tax Policy Catalog (trial) for Energy and Water Conservation Projects” (《關於公共基礎設施項目和環境保護節能節水項目企業所得稅優惠政策問題的通知》).

Technologies for municipal solid waste incineration. The WTE industry in China mainly adopts two types of incineration technology, namely grate incinerator and circulated fluidized bed. Grate incinerator technology was originally developed in Germany, Japan and the United States and has developed rapidly over the past 100 years into one of the most mature and widely used technologies in the WTE industry. The use of grate incinerator technology in China has mainly developed through importing foreign equipment or adopting foreign technologies, while some leading domestic companies have started to independently develop grate incinerator technologies that are tailored to the characteristics of Chinese municipal solid waste.

The key equipment for grate incinerator technology is the combustion grate. The major difference among various combustion grates lies in their structure and motion. In general, combustion grates can be divided into three types: the reverse-acting grate, the direct motion grate and the reciprocating grate. The reverse-acting grate and reciprocating grate are the most widely used incinerators in China, while the direct motion grate type is less common as it cannot achieve full combustion of waste.

For historical reasons, many small domestic thermal power plants transformed into WTE plants by adopting the circulated fluidized bed technology and mixing coal with waste material during the incineration process, allowing for potential abuses of the preferential power tariff if a plant used more coal than necessary to support combustion of the waste. The government has since introduced a set of policies to curtail these abuses of the subsidies. The Ministry of Construction (“MOC”), the State Environmental Protection Administration (“SEPA”) and the Ministry of Science and Technology jointly issued the “Policy on Municipal Solid Waste Treatment and Pollution Control Technology” which suggested grate incinerator technology be adopted in preference over other incinerator types. This policy restriction has slowed the growth of circulated fluidized bed technology and is expected to make grate incinerator technology the dominant technology in the WTE industry in China. WTE plants currently using grate incinerator technology account for approximately 54% of total WTE plants while those using circulated fluidized bed technology account for less than 50%.

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Overall, grate incinerator technology is mature and enjoys advantages in performance, environmental protection and policy support. Therefore, the trend toward greater usage of grate incinerator technology is expected to continue in the future.

Comparison of major incineration technologies

<u>Factors</u>	<u>Grate Incinerator Technology</u>	<u>Circulated Fluidized Bed Technology</u>
Technological maturity	Long history with mature technology	Short history but commercialized
Combustion mode	Waste is fed into the incinerator directly to be dried then combusted; relatively large blocks of waste with longer average combusting time	Dry and crush waste particles with combustible heat media (600-700°C); shorter average combusting time
Cost of investment	RMB300-800 million /1,000 tons of daily treatment capacity	RMB300-600 million /1,000 tons of daily treatment capacity
Operational cost	RMB80-100/ton	RMB150-200/ton
Auxiliary material	Need small amount of diesel fuel during initial combustion	Need to add substantial amount of coal, which according to the requirement of the State Environmental Protection Department, blending coal ratio may not exceed 20%
Impact of waste size	Able to accept waste particles of various sizes; only large chunks need to be crushed	Waste requires pre-treatment before combustion in order to create acceptable waste particles
Flue gas treatment	Potential issue with dioxin emissions, but able to fulfill emission standard through gas treatment equipment; flue gas production of approximately 0.35 to 0.48 cubic meters/ton of waste	Flue gas production of approximately 0.5 to 0.9 cubic meters/ton of waste
Ash	Minimal amount of ash: 2.5-3% of the waste treated	Large amount of ash: 15-20% of the waste treated; Must be treated as hazardous waste with higher cost
Leachate	Leachate must be treated separately, unable to spray back for combustion	Able to spray leachate back for combustion, but will affect the combustion efficiency

Source: China Association of Urban Environmental Sanitation, the First China Business Post

Note: Grate incinerators are divided into three types: grate incinerators with imported equipment, those with imported technology and those with domestically produced technology; the cost of investment varies depending on the type of grate incinerators used

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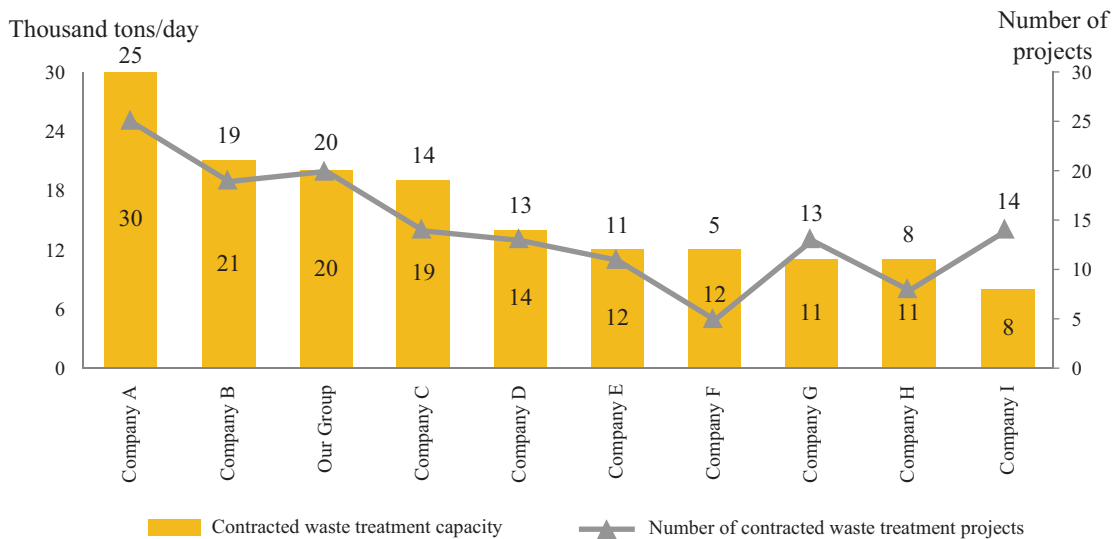
Competitive landscape of the WTE industry in China

The BOT model is the most widely adopted industry norm for WTE projects in China. Under a BOT arrangement, the company that is awarded the contract will construct the WTE facility and then receive a treatment fee for municipal solid waste delivered by the local government. It is a WTE industry norm that the municipal solid waste is provided for free by the local government authorities. Government policies and initiatives for development of the WTE industry in China benefit the industry as a whole and generally do not confer a competitive advantage on particular companies. All qualified WTE projects benefit similarly from government policies and initiatives such as waste treatment fees and preferential electricity tariffs. While the preferential electricity tariffs are based on a national benchmark, certain cities or provinces provide for larger waste treatment fees as compared with other areas, and so the degree to which a given WTE company will benefit from these fees may depend in part on the location of its projects. On average, the waste treatment fee for major provinces ranges from RMB50 to RMB100 per ton.

In terms of total contracted waste treatment capacity, with few major nation-wide players including China Everbright International Limited (“**Everbright International**”) and Hangzhou Jinjiang Group, the WTE industry is relatively fragmented and has regional characteristics. As of December 31, 2013, the 10 largest WTE companies in China had a total contracted municipal solid waste treatment capacity of 157,000 tons per day (including projects in the preparation, construction and operational stages). Among these, the top three players (inclusive of our Group), collectively represented a total contracted waste treatment capacity of 70,000 tons per day, representing approximately 45% of the top 10 major players’ market share. Six other WTE enterprises also had contracted waste treatment capacity above 10,000 tons per day. Based on actual waste treatment capacity, our Group was one of the top ten WTE companies in China (such top ten companies representing over one-third of the estimated total treatment capacity in China), with an actual municipal solid waste treatment capacity of 5,250 tons per day as of December 31, 2013.

Based on number of projects under contract, Company A currently has the most WTE projects (25), followed by our Group (20) and Company B (19). More than 90% of the WTE projects invested by the ten major companies in the WTE industry are BOT projects, which is in line with government preferences and policy trends. Among companies using grate incinerator technology, our Group currently ranks first in terms of number of projects under contract (20), with the two nearest competitors having 19 and 14 projects, respectively.

Major competitors’ contracted waste treatment capacity and project number as of December 31, 2013



Source: Company websites; <http://www.solidwaste.com.cn/>

Note: Projects mentioned above includes projects in the preparation, construction and operation stages.

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As the mainstream technology in domestic and international WTE markets, grate incinerator technology is used for approximately 54% of WTE projects in China as of December 31, 2012. The major waste incineration enterprises in China currently using grate incinerator technology include our Group, Everbright International, Shanghai Environmental Protection (Group) Co., Ltd. (“**Shanghai Environmental**”), Weiming Group Co. Ltd., Chongqing Sanfeng Environmental Industry Group Co., Ltd. (“**CSEG**”) and C&G Environmental Protection Holdings Limited (“**C&G**”). In terms of total number of projects under contract, our Group ranks first among WTE companies using grate incinerator technology with 20 projects. While Everbright International typically imports its grate incinerator technology directly from overseas, our Group has developed an adapted grate incinerator model based on the original Martin technology. According to EY Advisory, the localized technology developed by our Group is suited to municipal solid waste in China, reduces the exhaust gas emissions below the nation-standard level and leads to cost savings of up to 50% compared to imported grate incinerator technology. In addition, grated furnace technology has higher overall performance in terms of construction and operation.

Areas such as the Yangtze River Delta, Pearl River Delta and Bohai Economic Rim are the key development regions targeted by companies using grate incinerator technology. In particular, competition in Jiangsu, Guangdong, Zhejiang and Shandong provinces is intense as over half of the companies using grate incinerator technology have invested in or bid for WTE projects in these areas. There are 19 WTE projects using grate incinerator technology in Jiangsu and more than 10 WTE projects using grate incinerator technology in each of Zhejiang, Shandong and Guangdong. Aside from the few WTE companies with nation-wide business coverage, such as Everbright International, Hangzhou Jinjiang Group and our Group, WTE companies typically have a regional concentration for their business development. For example, Shanghai Environmental invests and operates a number of local waste incineration projects in Shanghai region; Weiming Group Co. Ltd. from Wenzhou invests in and operates over 10 waste incineration projects of which nine are located in Zhejiang. As an exception to this trend, our Group and Everbright International have expanded nation-wide, effectively responding to the growing demand for municipal solid waste treatment throughout China. As of December 31, 2013, our Group had 20 WTE projects in operation, under development or in preparation, with waste treatment capacity of approximately 20,000 tons per day in provinces such as Jiangsu, Zhejiang, Shandong, Guangdong and Hubei, establishing a solid market position, while Everbright International, with Jiangsu as its base, has acquired a number of concessions for waste incineration projects in provinces such as Guangdong, Zhejiang and Shandong.

Major challenges faced by the waste incineration industry in China

Public Opposition. Although the WTE industry has favorable prospects for future development, it must properly manage public opposition. Dioxin emissions produced by waste incineration have been a major focus of public concern. During the Eleventh Five-Year Plan, while a large number of WTE projects were constructed, a number of WTE projects were halted due to public protest.

Pollution Issues. Improving combustion and pollution control technology to reduce dioxin emissions is one of the major challenges faced by Chinese WTE enterprises. In addition to dioxin, flue gases produced by incineration also contain sulfur dioxide, hydrogen chloride, heavy metal, slag and other pollutants. The government has issued “Control Standards for Pollutants from Municipal Solid Waste Incineration (GB18485-2001)” to limit the emission of such pollutants.

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In Europe and Japan, where waste incineration technology is highly developed, the standard for dioxin emissions for new projects is below 0.1 nanograms toxic equivalent units per normal cubic meter (0.1ng-TEQ/Nm³). The current Chinese standard is 1.0ng-TEQ/Nm³ with most WTE plants in China do not reach the international standards of 0.1ng-TEQ/Nm³. Due to increasing public environmental awareness, the government is expected to gradually tighten the relevant emission standards and require waste incineration companies to improve incineration and pollution treatment technology.

Technological Issues. Typically, the calorific value of municipal solid waste must reach at least 4,000kJ/kg (preferably greater than 5,000kJ/kg) to meet the requirements for incineration. Municipal solid waste in China generally has a high level of water and non-combustible material with low calorific value. As a result, there is a need to develop incineration technology better suited to the characteristic of Chinese municipal solid waste to achieve an efficient and stable incineration process.

Various Chinese WTE enterprises, especially those using grate incinerator technology, have actively made improvements to foreign technology to adapt these technologies to the unique characteristics of municipal solid waste in China, such as by enlarging the heating area in the incineration furnace to maximize the efficiency of combustion and power generation. For example, our Group successfully developed the multiple drive expeller grate waste incinerator. In addition, Hangzhou New Century Group and Weiming Group Co. Ltd. have also independently developed their own technologies, namely the “dual zone combustion bed regulating municipal solid waste incinerator” and the “reciprocating multi-row grate type municipal solid waste incinerator”, respectively.

The incineration technology innovations developed by Chinese enterprises have gained international recognition. For example, our Group became the first domestic WTE enterprise certified with the Clean Development Mechanism by the United Nations.

Barriers to entry in the Chinese WTE Industry

Capital Barrier. WTE projects usually require a large initial investment. For example, according to the Securities Herald, an incineration plant with a daily treatment capacity of 1,000 tons typically requires an initial investment of RMB300-800 million with a return on investment period of around 10 years, which requires industry participants to have substantial capital strength and financing ability.

WTE project investment mainly includes project cost (construction, installation and equipment costs), compensation for land acquisitions, reserve funds and loan interest. Among these costs, project cost constitutes the largest proportion (typically 60% to 80% of the total cost).

Special Permit. According to the “Municipal Utilities Special Permit Management Approach” regulation issued by the MOC, investment in incineration projects requires a project concession right, which is agreed under the condition that the investor and operator return the ownership and management rights of the project to the government at no cost when the permit expires in 25 to 30 years.

INDUSTRY OVERVIEW

After obtaining the BOT concession, the project must obtain relevant approvals from the local Development and Reform Commission and local government authorities. The electricity authority determines whether the electricity produced will be on-grid and the SEPA administers emission rights. Effective government relationship management, combined with business qualifications and adequate project experience, are crucial factors in obtaining the right to invest in a WTE project.

REPORT COMMISSIONED FROM EY ADVISORY

We commissioned EY Advisory, an independent advisory firm with relevant industry experience, to conduct an analysis of, and to report on, the PRC waste incineration and power generation industry (the “**EY Advisory Report**”). The report commissioned has been prepared by EY Advisory independent of our influence. EY Advisory is a professional services firm with over 700 offices located in 140 countries providing a broad array of services including commercial due diligence, market penetration and growth strategy, competitive analysis and market assessment. EY Advisory’s clients have included a number of listed and unlisted companies in the WTE industry in the PRC.

The EY Advisory Report we commissioned included information related to the PRC WTE including government regulations and initiatives with respect to the industry, statistics relating to waste production, waste treatment and tariffs and future estimates and trends. EY Advisory’s independent research was undertaken through both primary and secondary research obtained from various public and private sources, as well as the Group’s management with respect to our market position. Secondary research involved reviewing company reports, independent research reports, data based on EY Advisory’s own research databases and from government publications and industry sources. Primary research involved interviewing leading industry participants, government officials and companies’ executives.

EY Advisory made the following major assumptions about China’s economy in the preparation of the EY Advisory Report:

- the growth in GDP, urban population and overall population in the PRC will remain stable from 2012-2015;
- the estimated growth in treatment capacity for municipal solid waste in the PRC is based on government policy announcements, including the Twelfth Five-Year Plan; and
- estimated growth in the number of WTE plants is based on projected treatment capacity divided by the historical average treatment capacity per plant.

As far as our Directors are aware, there has not been any material adverse change to the market information set out in the EY Advisory Report since the date of such report.