A Report on China's Solid Waste Market

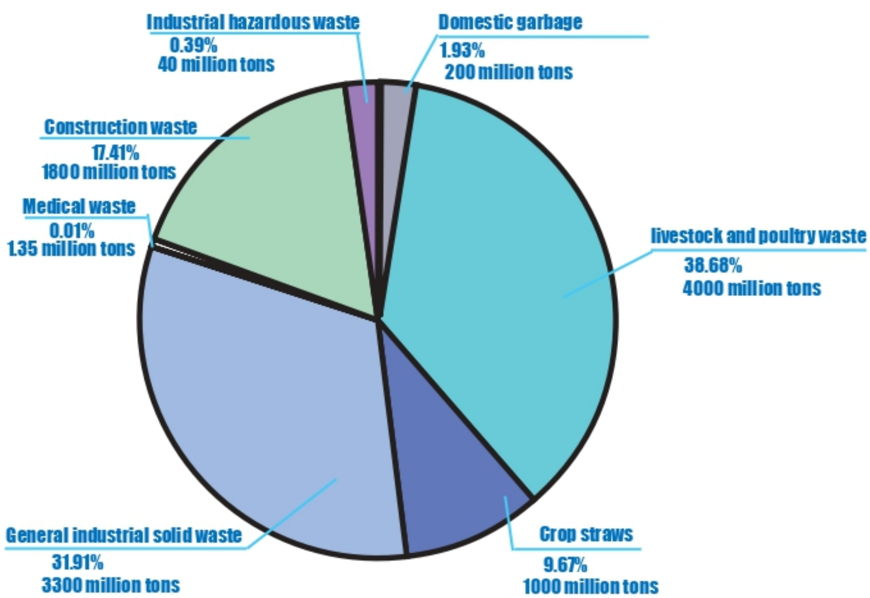
February 2020

Content

Background

China is the country with the large amount of population and solid waste generated in the world. Each year, the total amount of solid waste generated in China is about 10 billion tons which includes nearly 4 billion tons of livestock and poultry waste comprising approximately, 1 billion tons of crop straws, 3.3 billion tons of general industrial solid waste, 40 million tons of industrial hazardous waste, 1.35 million tons of medical waste, about 1.8 billion construction waste, and 200 million tons of municipal waste in large and medium cities.

China's solid waste industry situation and market demand



Within the solid waste market, China's municipal waste generation is significant. According to relevant data released by the China National Bureau of Statistics, the volume of municipal waste collection and transportation in China was 203.62 million tons in 2016, an increase of 28.8% from the volume of 158.05 million tons in 2010. In 2016, China's disposal of municipal solid waste was at 196.74 million tons and had a disposal rate of 96.6%. According to this growth rate, China's municipal solid waste collection is expected to reach 240.97 million tons by 2020 which means China needs to increase its collection and disposal capacity by 44.23 million tons. The solid waste disposal market in China still has room for significant expansion and will require significant investment to achieve the needed level of proper solid waste disposal.

China's current solid waste disposal approaches

Currently, there are three commonly used solid waste disposal approaches in China: sanitary landfills, incineration, and composting. In 2017, there were 2,194 cities and counties in China and a total of 2,312 garbage disposal facilities. Among them, there are 657 cities, which have 285 incineration plants, 653 sanitary landfill sites, and 73 other disposal facilities. The rate of municipal waste disposal in these cities is 97.7%. Moreover, there are an additional 1,537 counties, which have 36 incineration plants, 1199 sanitary landfills, and 36 other disposal facilities. The rate of municipal waste disposal in these counties is 91%. According to China's statistics, in 2017, 56% of municipal waste was disposal at sanitary landfills, 39% of the waste was by incineration, and 5% of the waste was processed by composting or in other ways.

In recent years, the solid waste disposal market in China has rapidly developed and bringing with it a bright prospect for investment and a need for expansion. Incineration will gradually replace landfills to become the main approach of urban municipal solid waste disposal. At the same time, the proportion of landfills will continue to decline, and the disposal of landfill will change from disposal of municipal waste to disposal of the ash and other remaining contents from incineration.

From 2013 to 2017, Beijing and Shanghai have consistently been at the forefront of urban municipal solid waste generation. In these five years, without much change in the number of permanent residents in the two cities, the amount of waste generated in Beijing has increased by 34.26%, and 22.21% in Shanghai. This rapid growth of urban waste has created opportunities for the implementation of solid waste segregation in China. In November 2018, China's President Xi Jinping proposed that garbage segregation is the "new" trend in China. The object of garbage segregation in China is currently focused on municipal waste with specific requirements of segregation differing under the guide of specific cities and counties. In January 2019, Shanghai was the first city to legislate waste segregation, and require to segregate waste into 4 types, including household food waste, residual waste, hazardous waste, and recyclable waste. It was also the first city to enforce the law in July 2019. Following the implementation of this law, people in Shanghai quickly started to segregate garbage under the guidance of their communities. Because of the law, by the end of August, the total amount of household food waste in Shanghai had reached 9,200 tons per day, about one-third of the total municipal solid waste. Compared with 2018, the average daily level of household food waste had increased by 130%. Separating the household food waste and residual waste significantly improved the efficiency of waste disposal, because mixing these two types of waste will influence the heating value of the waste and the efficiency of the recycling.

The goal of solid waste disposal in China has gradually evolved from "reduction", which means improving efficiency and reducing waste generation, in the 1980s and 1990s to currently " harmlessness ", which means disposing waste to eliminate the harm it poses towards humans and the environment, and "recycling". Recycling and harmlessness will become the focus of China's garbage market for the immediate future. The first step will require waste to be segregated, recycled, and reduced, and then incinerated or put into landfills, which is the blueprint of China's current Waste Segregation Campaign.

Municipal solid waste Vs. hazardous waste

China has a large amount of urban municipal solid waste, and its amounts of industrial waste, construction waste, and hazardous waste have been increasing significantly as well. According to the China Environmental Statistics Yearbook, although the production of industrial solid waste has been decreasing each year since the introduction of green manufacturing in 2015, China still produced 2.941 billion tons of industrial solid waste in 2017. Moreover, in 2017, the market size of China's construction waste disposal industry exceeded 12 billion US dollars. However, according to government statistics, the overall resource utilization rate of construction waste in China is currently less than 10%.

At present, China's hazardous waste treatment and disposal industry also faces challenges. In 2015, China generated 39.76 million tons of hazardous waste, while the actual volume of treated and disposed waste was only 11.74 million tons, leaving a large gap in treatment. Although the total amount of hazardous waste is relatively small, the health hazards it poses on the environment are serious. China does not fully use current international best management practices in hazardous waste treatment and disposal. Many treatment and disposal facilities do not operate steadily and may in fact cause secondary pollution during the disposal process. With the tightening of hazardous waste disposal standards, it is expected that technology upgrades will be in high demand over the next few years. Figure 1 provided the estimated revenue of China's waste operations in 2020.

China's solid waste disposal industry started quite late at the end of the 20th century and is still in a stage of rapid growth. Municipal solid waste landfills are now mature and waste incineration is also relatively mature. As such, the business model is complete, and this market sector is quite stable. However, treatment and disposal technologies for hazardous waste and sanitation are in a period of rapid development. Kitchen waste, remediation to the soil and groundwater contamination caused by landfill leakage, construction waste, and oversized waste are in the early stages of development, but with a series of favorable policies will receive more attention.

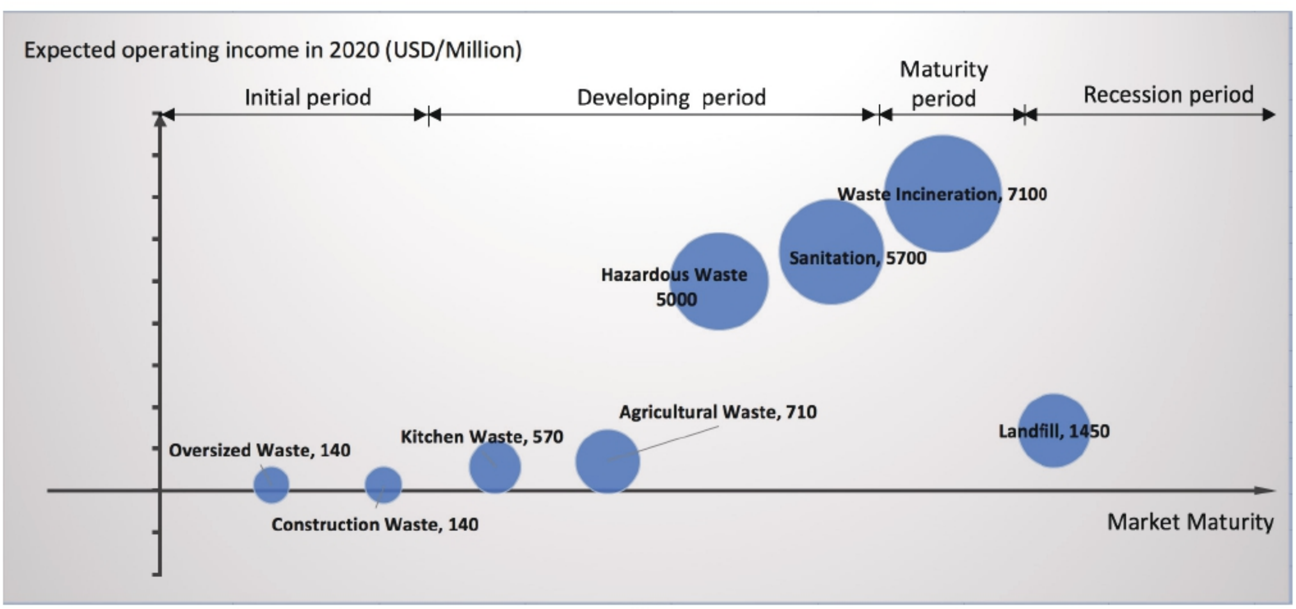


Figure 1. Prediction of 2020 Revenue from China Solid Waste Operation
(source: E20 Solid Waste Platform)

Related policies for the solid waste disposal market

The development of the environmental protection industry is closely driven by government policies. During the last two years, institutional reforms, drastic modification of the Solid Waste Law, comprehensive promotion of waste segregation, and the development of “Waste-Free Cities” have brought huge benefits to China’s solid waste market.

China’s institutional reforms have been strengthened and the solid waste management system has been continuously optimized. In March 2018, the State Council issued the “State Council Institutional Reform Plan”, which upgraded the management system of the solid waste industry. At the country, provincial and city levels, there are many sub-sectors in solid waste. The management of solid waste from the central to the local level involves many departments. The management of industry is under the guidance of the State Council, the National Development and Reform Commission, the Ministry of Housing and Urban-Rural Development, the Ministry of Ecology and Environment, the Ministry of Finance and other ministries, and is implemented by relevant local departments.

The Solid Waste Law was revised significantly after 15 years, providing clearer guidance for industry development. In August 2019, the Ministry of National Ecology and Environment issued a public consultation on the “Solid Waste Law”. On the one hand, this consultation highlighted the requirements for the harmless bottom line of solid waste pollution prevention and control. On the other hand, it also created pollution control requirements for the disposal process and its products, reducing amounts of buried waste at the maximum level. Different levels of charging for disposal and disposal will become an important breakthrough point for waste segregation. At the same time, hazardous waste disposal needs more guidance with detailed and hierarchical management. China’s Ministry of Housing and Urban-Rural Development and the other 9 ministries have issued a “Notice on Comprehensive Carrying out the Municipal Waste Segregation in Prefecture Level and Above Cities” and decided to start the municipal waste segregation work at and above the prefecture-level cities in 2019. The notification requires that by

2020, 46 key cities will basically have municipal solid waste segregation and disposal systems. Then, at the prefecture-level and above, cities must establish waste segregation and disposal systems by the end of 2025.

The "Thirteenth Five-Year Urban Harmless Waste Disposal Facilities Construction Plan" proposes that by the end of 2020, the municipality, planned cities and provincial capitals will have achieved 100% harmless disposal of municipal solid waste; the rate in other cities will reach more than 95%; and the rate in counties will need to be more than 80%.

In 2019, the General Office of the State Council issued the Work Plan for the Pilot Construction of "Waste-Free Cities", which called for the steady progress of pilot work for the construction of "Waste-Free Cities".

Incentives to invest in technology

China's solid waste industry is in the era of mergers and acquisitions. It has experienced two major mergers and acquisitions periods. For the first time, in the early 2000s, enterprises have purchased a large number of similar companies in order to increase their operating scale and market share. Leading companies have become industry leaders in this wave of mergers and acquisitions. The second mergers and acquisitions trend is regarding the current integration of the industry chain.

According to the statistics of the E20 Platform, driven by China 's "Going Global" and "The Belt and Road Initiative" policies, and in the face of fierce competition and an urgent need to seek overseas technology and management introduction, overseas mergers and acquisitions increased by 332% in 2017, which is much higher than the overall rate of mergers and acquisitions. From 2015 to 2017, environmental protection mergers and acquisitions have gradually stabilized, and the annual transaction value is about 6 billion US dollars. In 2017, there were 86 mergers and acquisitions in the industry with a transaction amount of US $ 5.5 billion.

Since 2015, China's environmental protection industry has experienced quick development under state-owned capital. Whether it is state-owned mergers and acquisitions or state-owned capital investment, these actions show that state-owned companies have been paying more attention to environmental protection.

Finally, China has a high demand for rapid and sustainable development in the solid waste industry. In this era of mergers and acquisitions, relevant government departments will continue to pay attention to the development of the industry, and solid waste companies will also need to seek more economic and efficient technologies and ways of operating to stay competitive and in compliance with Chinese regulations.

Reference

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7. Pictures are from envato elements.

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