

Toxic Materials and Waste Management

BOCOG set ambitious waste management commitments and saw the Olympics as a way to kick-start improving waste management in the city.

The environmental department of BOCOG in charge of waste management during the Games has set out a "Venue Cleaning and Waste Management Operation Outline" that includes various waste management standards, policies, and procedures.

In 2004, the primary method of the treatment of waste was 89.6% landfills, 5.8% composting and 4.6% incineration. At the end of 2006, Beijing had 23 domestic waste disposal facilities. Of the 23 existing facilities six are domestic waste transfer stations, 13 are landfills and four are comprehensive processing plants. Only three stations, the Shunyi Comprehensive Processing Plant, The Nangong Composting Plant and the Huairou Comprehensive Processing Plant offer composting service. According to official figures, 4.13 million tonnes were produced in the eight central districts, where overall processing capacity was close to 3.989 million tonnes (processing rate: 96.5 %).¹⁵³ By 2008, the Beijing municipal government plans to build 15 new garbage treatment facilities to process 12 500 tonnes of waste daily. This includes three new landfills, seven new comprehensive processing plants, three new incineration plants, and two transfer stations.¹⁵⁴

In 2003, Beijing introduced its first incineration plant in Gaoantun, which can process about 1600 tonnes of waste per day.¹⁵⁵ Beijing authorities see the introduction of waste incineration plants as a gain for the city as they use the latest German technology to treat flue gas while eliminating the amount of land taken up by landfills. It is reported that by 2010, there will be four incineration plants constructed in Beijing.¹⁵⁶ These incineration plants are: Nangong,

located in the Daxing District; Asuwei located in Changping District; Liulitun, located in Haidian district; and Gaoantun in Chaoyang District.¹⁵⁷ Landfill remains the primary waste treatment method for Beijing to date although the three new waste incineration plants to be brought on line in time for the Games may signify a shift towards incineration as a popular method of waste treatment.¹⁵⁸



Beijing Commitments

1. To implement a safe urban domestic waste disposal system by 2007 and to establish processing facilities for non-hazardous urban waste in the Beijing suburban area.¹⁵⁹
2. To safely treat and dispose of all solid wastes produced in the city by 2008, 50% of the solid wastes will be separately collected and 30% recycled for use as resources. All solid wastes produced during the Games will be separately collected and disposed of.¹⁶⁰
3. To construct disposal facilities for hazardous waste with a total capacity of approximately 10 000 tonnes a year (which includes processing and disposal of medical and radioactive waste) for Beijing.¹⁶¹

153 UNEP, "Beijing 2008 Olympic Games: An Environmental Review," p.132.

154 Xinhua, "Beijing's primary medical waste facility is constructed, Beijing is able to process 93% of waste in the city," http://news.xinhuanet.com/newscenter/2004-12/28/content_2388684.htm

155 2003 Beijing economic development update. <http://www.sei.gov.cn/ShowArticle2008.asp?ArticleID=85572>(in Chinese)

156 "Beijing builds cogeneration plants, the first garbage facilities will be constructed this year." <http://2008.people.com.cn/GB/22180/46353/4182524.html>.

157 "Friends of Nature"<http://www.fon.org.cn/content.php?aid=9230>. (in Chinese)

158 Xinhua. http://news.xinhuanet.com/newscenter/2004-12/28/content_2388684.htm (in Chinese)

159 UNEP, "Beijing 2008 Olympic Games – An Environmental Review," p.132.

160 BOBICO, "Section Four: Environmental Protection and Meteorology" p.57.

161 UNEP, "Beijing 2008 Olympic Games – An Environmental Review." p.132.

4. To construct facilities for the concentrated disposal of medical wastes with the daily disposal capacity of 60 tonnes.¹⁶²

Greenpeace Guidelines

Guideline 14 - Use only environmentally-safe building materials and products that minimize pollution of the environment (air, soil, water, ground water) throughout their entire lifecycle (production, use and disposal). Ban polyvinyl chloride (PVC) and other organochlorine materials and use more environmentally acceptable materials.

Guideline 15 - Ban persistent, bioaccumulative and/or toxic substances and materials that incorporate them in Olympic construction or merchandising. Ban persistent organic pollutants (POPs) such as organochlorine-based chemicals. Other examples of persistent, bioaccumulative and/or toxic substances that should be excluded from use include: organotins, phthalates, artificial masks, cadmium, lead, chromium, brominated or chlorinated flame retardants. Ban any material that exhibits or is suspected of exhibiting endocrine disrupting properties.

Guideline 24 - Apply an integrated waste management program based on waste avoidance and minimization.

Guideline 25 - Establish a 100% closed-loop recycling system for packaging, temporary structures and other short-life products and ban all non-recycled and non-compostable materials.

Guideline 26 - Use systems to minimize waste generation to the fullest extent. All waste systems must be fully integrated and have the elimination of waste as their main aim.

Selected Achievements

Selective venues at the Games have undertaken zero-waste approaches to waste management. The Olympic Park produces 5000-7000 tonnes of green waste a year, which includes grass, leaves and branches that are produced by plant life in the park. The treatment center at the north end of the Park can process about 3000 tonnes of waste per annum. There will also be a unique "yellow water" treatment system that will process human waste to allow these waste products to return to the park as fertilizer.

According to official documents, BOCOG was directly in

charge of the Olympic venue waste management test run at the Fengtai softball test event, where it claimed that of the total 48 734 kg of waste produced by the event, 32 207 kg was sorted as recyclable waste, 11 013 kg was sorted as compostable waste, and 5 514 kg was managed as mixed waste. BOCOG claims that of all the waste generated, 100% was safely treated and disposed and 88.7% was recycled.

However, Greenpeace has not seen the official waste management plan for the 2008 Beijing Games, and thus it is very difficult both to confirm how waste will be dealt with during the Games, and how successful BOCOG's approach will be. Greenpeace's access to information and involvement in Beijing in this area is very different from that of the Sydney Games where Greenpeace and other organizations were part of a waste management group that advised SOCOG on how to deal with waste generated by the Olympics and how to carry out public education on waste reduction.

Beijing

According to government figures, many goals set for the reform of Beijing's waste management system were met. The most important criteria that the Beijing government uses when addressing waste reform is the urban non-toxic disposal ratio. According to official data, this rate has steadily risen from 85% in 2001 to 96.50% in 2007.¹⁶³ Greenpeace was unable to confirm how this urban non-toxic disposal ratio is derived.

According to official documents and Chinese media, several new garbage treatment facilities offer integrated waste treatment methods. The biogas technology introduced at the Beishenshu landfill site transforms the biogas produced at the landfill into electricity, which is then used to power the percolate treatment plant.

The Asuwei power plant has developed a method to trap landfill gas for electricity generation. According to BOCOG, the leachate treatment facility can generate 20 million kWh of electricity per year, enough to provide energy for 1 700 families.¹⁶⁴

Beijing's new plastic bag ban

Beginning June 1st, 2008 China has banned all shops and grocery stores from providing free plastic bags to customers as a first step to eliminating white pollution in the country. This

162. BOCOG, "Beijing 2008: Environmental Protection, Innovation and Improvement 2001-2006 Update," p.49.

163. BOCOG, "Beijing 2008: Environmental Protection, Innovation and Improvement 2001-2006 Update," p.49.

164. "Beijing's Asuwei plant starts to generate power by use of marsh gas." <http://en.beijing2008.cn/20/67/article214076720.shtml>.

nationwide policy is an important step to reduce packaging and to cut back on the over three billion plastic bags used by shoppers in China each day.¹⁶⁵

Missed Opportunities and Mixed Results

The development of three new incinerators for Beijing in the run up to the Olympics represents an important missed opportunity. Incineration plants are liable to release various harmful chemicals into the atmosphere, especially cancer-inducing dioxins. The introduction of incineration as a waste treatment method also means that waste is not viewed as a potential resource by the city. In China's rapidly developing economy and rapidly urbanizing cities, it is essential to promote re-use and recycling strategies. Moreover, the Games should be seen as an opportunity to speed up the development of a zero-waste strategy. More public engagement programs before the Games could have helped to boost awareness for waste reduction.

Greenpeace Recommendations – Beijing Games and Beyond

Beijing Beyond 2008

Incineration will only increase the amount of pollutants released into the atmosphere. Greenpeace recommends that Beijing moves away from this method of waste treatment. Beijing's investment in urban waste management should also move away from the development of landfills, which have a high potential for contamination by producing leachate which may threaten precious water sources. Landfills may also produce dangerous amounts of methane gas. Municipal waste reduction targets should be set in order to move the city towards increased waste separation. Furthermore, citizens need to be encouraged to engage in re-use, recycling, and composting.



China Beyond 2008

China's waste treatment system is still developing and at this stage, it is important to push for a more integrated system of waste treatment as well as to move towards more advanced technologies that eliminate our reliance on incinerators and landfills. Incineration does not represent a sustainable method of waste treatment and other Chinese cities should take all precautions to avoid incineration.

China should urge manufacturers and producers to take responsibility for their products over their entire life-cycle. Mandatory regulations should be enforced so that all manufacturers are forced to take Extended Producer Responsibility (EPR)¹⁶⁶ for their products.

Future Olympic Games - Recommendations to the IOC

The IOC should take steps to strongly discourage expanding landfill and incineration systems by Olympic host cities and encourage cities to move towards closed-loop, integrated waste treatment systems that focus on waste minimization, reuse, recycling, and large-scale composting of food and organic waste. Future Olympic host cities should minimize waste generation for all aspects of Olympic venue construction. Finally, the IOC should require all bid cities to follow the huge success story for Sydney and to engage in large-scale recycling of construction waste for all new Olympic venues.

165. Xinhua. "China uses over 3 billion plastic bags per day." http://news.xinhuanet.com/newscenter/2007-11/22/content_7123377.htm (in Chinese)

166. Extended producer responsibility imposes accountability by the producers of products over the entire life-cycle of the product and has been endorsed by the EU and is being implemented in EU member countries for packaging and other products.