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Guangdong Environmental Engineering and Equipment General Corporation

<<http://www.geeein.com.cn>>

Links and References

Exporting to China: A Guide for Canadian Businesses, Export Development Canada

GLOBE-Net, the On-line Guide to the Business of the Environment, published by the GLOBE Foundation, has many articles and reports on the China environmental market.
<http://www.globe-net.com>

Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste

China Environment Industry Network <http://www.cein.net>
China Environmental Protection <http://www.zhb.gov.cn>

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SOLID & HAZARDOUS WASTE MANAGEMENT

Market Overview

Solid waste management, including hazardous waste and electronics waste treatment, has become a key environmental priority in China. The lack of adequate waste treatment facilities and decades of poor management practices, particularly with respect to hazardous wastes, have combined to create a serious threat not only to the environment but also to public health.

China's solid waste can be divided into three categories: Municipal Solid Waste (MSW), which includes waste generated from residential, institutional, commercial, and street cleaning sources; Industrial Waste, which includes all waste generated by industrial activities such as packaging, ash, scrap materials etc.; and Hazardous Waste, which refers to industrial hazardous waste generated as a by-product of the manufacturing process, medical waste, and small-scale generation of hazardous waste from households, institutions and commercial establishments.

The Chinese government has mapped out an aggressive plan to deal with hazardous and solid wastes. The Ministry of Construction launched a plan in 2003 to build 31 hazardous waste treatment centers, 300 centralized disposal facilities for medical waste and 31 warehouses for radioactive waste. Though implementation is far behind schedule, the plan highlights the potential market opportunities for foreign technology and equipment suppliers as domestic technologies are comparatively weak and still at the preliminary stage of development.

Support is also being provided from state and municipal agencies for the deployment of equipment for the treatment of urban waste, and for the recovery and disposal of waste electronic products, which has emerged as a lucrative market sector in China.

Remediation and Waste Management Services Market in China, 2000-2010

Year	\$ Millions	% of Global Market
2000	7,349.27	11.79
2001	7,232.17	11.48
2002	7,116.95	11.18
2003	7,003.56	10.88
2004*	6,961.70	10.64
2005*	7,343.36	10.75
2006*	7,820.67	10.91
2007*	8,329.02	11.08
2008*	8,870.40	11.25
2009*	9,446.98	11.42
2010*	10,061.04	11.60

* Estimate

Source: Icon Group International. The 2005-2010 World Outlook for Remediation and Waste Management Services. April 1, 2004.

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Opportunities

China's growing urban population has placed heavy demands on already over-taxed aquifers, solid waste management systems, landfills and hazardous waste processing facilities. B.C. companies that build and service high-end waste management systems, such as landfill leachate and gas collection or waste-to-energy systems could find profitable business prospects in this market. A surge of waste-to-energy projects has resulted from changes in the renewable energy law, which now allows energy generated from solid waste incineration to connect to the national power grid. B.C. companies with expertise and products for waste to energy systems, medical waste incineration, and sludge treatment systems may find good opportunities in China.

One market area of particular importance to B.C. companies is Guangdong province, China's industrial heartland. Solid waste management including hazardous waste and electronics waste treatment is high on the agenda. The Guangdong Provincial Government's environmental master plan envisages the construction of five regional hazardous waste treatment and management centres.

MARKET ENTRY STRATEGIES

B.C. companies not familiar with China's regulatory regime may enter the China market by way of product exports, technology transfers or by forming joint ventures with reliable Chinese companies who are often more experienced in bidding for major government projects.

Market savvy companies in Hong Kong often can provide a bridge between B.C. enterprises and the China market. Many products of Hong Kong origin enjoy zero tariffs when imported into mainland China, including environmental protection products. From 2008 on Hong Kong service suppliers are allowed to set up wholly-owned enterprises in mainland China to provide environmental protection services for municipal sewage, solid waste and exhaust gas treatment, noise control, nature and scenery preservation, and many other environmental protection services.

Multi-lateral agencies such as the World Bank and the Asian Development Bank are very active in financing China's environmental projects, most of which are subject to international bidding. B.C. environmental equipment and service companies can gain access to this market by registering with these agencies.

As a general precaution, B.C. companies should be aware that although China has indicated a strong commitment to improving protection for intellectual property rights, trademark infractions and theft of patented technology are still prevalent. Accordingly, B.C. exporters should enlist the services of a qualified lawyer familiar with China's intellectual property rights environment.

Technologies and equipment of particular interest to China are listed below according to the three solid waste categories:

Municipal Solid Waste:

- Advanced sanitary landfill technologies
- Garbage sorting systems
- Leachate collection systems
- Landfill gas collection systems
- MSW incineration technology
- Emission monitoring systems
- Fly ash treatment and recycling technology
- Waste-to-energy technology

Industrial Solid Waste:

- Recycling and re-utilization of chemical industry solid waste
- Recycling and re-utilization of metallurgy industry solid waste
- Recycling and re-utilization of mining industry solid waste
- Recycling and re-utilization of iron and steel industry solid waste
- Electronic waste treatment technology

Hazardous Waste:

- Incineration technology for hazardous waste
- Autoclave, chemical, and microwave technology for medical waste
- Incinerator automatic control systems
- On-line emission control system
- Smoke control systems, wet scrubber
- High-quality incinerator parts like feeder, spray nozzle, burner and seal parts
- High-quality blowers
- Advanced pyrolysis kilns

COMPETITIVE ENVIRONMENT

Competition in the hazardous waste treatment market is fierce. Japan, Austria, Germany and the United States are strong competitors aggressively pursuing market opportunities, often in collaboration with larger Chinese environmental engineering companies. Following China's WTO accession, environmental engineering design and "build-own-operate" projects for pollution control facilities have become

a key focus of foreign investors.

According to a 2005 SEPA study, environmental protection related industries are mainly concentrated along the eastern coastal area, the Yangtze River and in the economically more developed areas of central China. Established leaders in China's environmental protection industry include Tsinghua Unisplendour

Corporation Ltd, Rainair, and Guangzhou Yueshou Industry Co Ltd., all of which provide technologies and products for the treatment of sewage and solid waste.

REGULATORY ENVIRONMENT

China has promulgated a series of solid waste management laws, regulations and standards that have greatly improved the management of hazardous waste. At the national level the Law on Prevention and Control of Environmental Pollution Caused by Solid

Waste (2004) regulates the prevention and treatment of solid waste. State council regulations (2003) govern medical waste management and define procedures for hazardous waste operation permits at the state or local level. Regulations enforced by the SEPA

govern the identification, incineration, storage, land filling, and transportation of hazardous waste.

Key Companies

• **Tsinghua Unisplendour Corporation Ltd.**, is part of a large-scale high technology group mainly engaged in information technology, environment protection and biological sciences. The Tsinghua Unisplendour Group is well known in the Chinese environment protection industry and has constructed many state funded projects.

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• **Shenyang Hanyang Environmental Protection Enterprise Co. Ltd.**, a joint venture between Shenyang Solid Waste Treatment Center and Shenzhen Hanyang Investment Holding Co. Ltd., is engaged in medical waste disposal in Shenyang, Liaoning Province.

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