

# Greening Beijing's Industry for the 2008 Olympics

Prepared for  
Peter Salmon-Cox, DOE/OIT

by  
Jonathan Sinton<sup>1</sup>, David Fridley, and Debbie Brockett  
Lawrence Berkeley National Laboratory

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In its bid to host the 2008 summer Olympics, Beijing assured the International Olympic Committee that significant investments would be undertaken to raise Beijing's environmental quality to an acceptable level by the time the games were held. Reducing pollution from industry is a key focus of this effort, in addition to other major initiatives such as substituting natural gas for coal and controlling vehicular emissions. The city will reportedly relocate about 200 industrial enterprises currently within Beijing proper to suburbs or elsewhere to reduce air pollution.<sup>2</sup> New rules have been enacted with the intention of ensuring that all new developments in the city comply with the overall goal of improving Beijing's environmental quality. Even before Beijing was awarded the Olympics, justifying projects based on their supposed contributions to the success of the games had become de rigueur. According to the US Embassy in Beijing, China has committed to investing 147.8 billion yuan (\$17.9 billion) to improve Beijing's infrastructure and environmental quality, with \$6.6 billion alone to be spent on energy and environmental projects between 2003 and 2007.<sup>3</sup>

Specific information on Beijing's plans is scarce, since only general plans have been announced (see Appendix A). Although the main Olympic venue will be in the northern part of the city, requiring relocation of industrial facilities there, factories in southern and western Beijing will also move and be required to install cleaner production processes at their new locations. Much of this activity simply represents an acceleration of existing environmental goals. For instance, Beijing's Tenth Five-Year Plan (2001-2005) for environmental protection (as well as a campaign begun in August 2000) had already called for relocation of 100 factories, including the moving of 20 of the heaviest polluters to sites outside of

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<sup>1</sup> Contact: [jesinton@lbl.gov](mailto:jesinton@lbl.gov), 510/486-7081.

<sup>2</sup> General goals for environmental activities are described on the official website of the 2008 Beijing games at <http://www.beijing-olympic.org.cn/eolympic/xbj/lbj/lbj.htm>. Typical goals include are "By 2007, Beijing will consume five times as much natural gas as in 2000. No fuel coal will be used except in a few large boilers in power plants," and "Beijing will restructure its key industries and let the 200 industrial enterprises in the downtown area shift production or move out so as to reduce the amount of pollution in the urban areas."

<sup>3</sup> U.S. Embassy, Beijing, 2001 (<http://www.usembassy-china.org.cn/english/commercial/english/olympics/index.html>).

Beijing's Fourth Ring Road by the end of 2001.<sup>4</sup> The same source noted that 57% of Beijing's industrial enterprises (numbering over 5,000, according to the 2000 *China Statistical Yearbook*) currently are located in downtown Beijing, which includes only 2% of the municipality's total land area.

Funds for relocation and process renovation are expected to come partly from compensation paid by the city, and partly from the sale of land at their current sites. The conversion to other uses of the estimated eight square kilometers of industrial sites slated to be vacated will require significant site assessment and remediation services, but there are not yet specific plans for managing this process.

China's major oil company, Sinopec, and the State Bureau of Quality and Technical Supervision, responsible for petroleum product quality specifications, are discussing the implementation of new and more stringent quality standards for gasoline and diesel used in Beijing, starting in 2007. If implemented, these new standards would lower the sulfur content of gasoline from the current allowable 800 ppm to 30 ppm. Similarly allowable sulfur in diesel fuel would drop from the current 2,000 ppm to 30 ppm as well. Although targeted for Beijing, if approved, these standards may also be applied to Shanghai and Guangzhou.

At least one company has announced plans to move and to restructure. Shougang (Capital Iron and Steel) Corporation, a heavy contributor to air pollution in Beijing, will move its most-polluting operations, including its coking and iron smelting plants, out of Beijing to Qian'an, Hebei Province within the next several years, and reduce steel production by one quarter.<sup>5</sup> The company's headquarters will remain in Beijing, and it will diversify into other areas of production to further reduce emissions by 2005.

American companies have already become involved in this effort. CH2M Hill (China), a subsidiary of the Denver-based US environmental services company, has won a contract to advise Beijing's Environmental Protection Bureau on its plans for making the 2008 games as environmentally friendly as possible. CH2M Hill previously contracted with the city of Sydney for environmental consulting associated with its Olympic games.<sup>6</sup> In part because of Sydney's emphasis on environment in its 2000 Olympics, the Australian government is providing strong promotional support to Australian industry to compete for

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<sup>4</sup> China Daily. 19 June 2001. "Beijing to go greener over next five years" (<http://www1.chinadaily.com.cn/news/cn/2001-06-19/14775.html>). The report said that the Beijing Transformer Plant moved from a downtown site to the northern suburb of Changping.

<sup>5</sup> Reuters. 28 September 2001. "Beijing steelmaker to move plants before Olympics".

<sup>6</sup> CH2M Hill is sponsoring a session at the GLOBE 2002 conference, to be held in Vancouver from 13 to 15 March, 2002, on business opportunities related to China's environmental plans for the 2008 Beijing Olympics (<http://www.globe2002.com/track67.htm>).

environmentally related business opportunities in Beijing.<sup>7</sup> The Hong Kong government has also set up an English-language website as well (<http://www.tdctrade.com/olympics/>) and provides information on business opportunities.<sup>8</sup>

Even though Beijing is still in the process of preparing its plans for changes in industry, it is still possible to preliminarily identify sectors in which there may be opportunities by reviewing Beijing's industrial statistics. Appendix B lists the number, value added, and energy use of industrial enterprises in Beijing by sector. It shows, for instance, that, in terms of number of enterprises, Beijing's industry is dominated by machinery and equipment manufacturers. In terms of value added, electronic and telecommunications equipment tops the list, followed by iron and steel (Shougang), electric utilities, and chemicals. The big energy users, and those that might best be able to achieve emissions reductions through efficiency, include, again iron and steel (including coking—again belonging mainly to Shougang), chemicals, and building materials. Most of these, however, are already located outside the central city area targeted for clean-up and relocation.

Appendix C reproduces several ordered lists from the *Beijing Statistical Yearbook, 2001*. These lists name the top 100 large and medium industrial firms in Beijing in terms of sales revenue, pre-tax profits, profit-assets ratio, and total assets.

Olympic-related investments are not confined to Beijing. Neighboring Tianjin hopes to attract some of the investment funds earmarked for the cleanup.<sup>9</sup> Qingdao, a coastal city in Shandong, will also be hosting some of the water sports events of the 2008 Olympics. The city is investing in its water quality monitoring network, strengthening pollution prevention and control systems, and developing “green communities” and an “ecological construction demonstration area”.

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<sup>7</sup> CNN. 13 July 2001. “Business eyes Olympic gold in Beijing”. <http://asia.cnn.com/2001/WORLD/asiapcf/east/07/12/olympics.business>. The Australian national and state governments, for instance, maintain websites with information intended to help Australian companies (e.g., <http://www.austrade.gov.au/beijingolympics/page57020.asp>, and <http://www.sd.qld.gov.au/dsdweb/htdocs/global/content.cfm?ID=6658>).

<sup>8</sup> See for example the report “2008 Beijing Olympics: Business Opportunities for Hong Kong” at <http://www.tdctrade.com/econforum/tdc/010802.htm>.

<sup>9</sup> <http://www.usembassy-china.org.cn/english/sandt/Tianjin.htm>

Among the measures Tianjin hopes to implement are:

- Continue to convert coal-burning facilities to natural gas and begin to convert taxis and buses to run on LPG and CNG. Eliminate small coal boilers within the six urban districts and prohibit new coal facilities there.
- Expand cogeneration of municipal steam heat from power plants.
- Increase the sulfur emission levy on factories and power plants so as to encourage them to invest in desulfurization technology.

Over the next several months, it is expected that more detailed plans will be released, and this report will be updated to reflect new developments.

## **Appendix A. Action Plan for the Green Olympics**

[[http://www.beijing-olympic.org.cn/eolympic/xbj/lbj/lbj\\_lxsd.htm](http://www.beijing-olympic.org.cn/eolympic/xbj/lbj/lbj_lxsd.htm)]

### **Objectives**

Beijing's "Action Plan" will turn the capital into a "green city." These plans include reducing automobile emissions, protecting water resources and improving the city's infrastructure. By September 2008 the city's environment will meet the demands to host the Olympic Games in every aspect.

### **Green Olympics Program**

#### **Reducing Coal Pollution**

Beijing will import more natural gas from other provinces and extend its gas pipeline network in the city to reduce pollution caused by burning coal. The city will eliminate the small-sized coal-burning boilers and make more efforts to make use of solar energy and the geo-thermal energy resources.

#### **Reducing Automobile Pollution**

Beijing will give priority to developing public transportation to control the growing number of cars. Beijing will open more bus routes and construct subway lines including the No.5 subway route and the Ba-Tong Route. The city will continue to keep strict discharge standards for the automobiles. By 2007, 90 percent of the buses and 70 percent of the taxis will be environmentally friendly. Almost 200 liquefied petroleum gas stations and natural gas stations will be put into use.

#### **Protecting Water Resources and Control Water Pollution**

The city will reinforce the water-soil conservation and water resource protecting forests at the upper reaches areas of Miyun and Huairou reservoirs and carry out de-silting and water improvement projects at the Guanting reservoir.

#### **Reducing Solid Waste Pollution**

Reducing the city's daily garbage is a priority for the government. By 2007, regulations will ensure the safe and efficient disposal of all domestic rubbish.

#### **Protecting bio-diversity**

The management and construction of nature reserves, wetlands, forests, bird habitats will be further strengthened. The sale of wild animals will be prohibited. Nature Reserves will account for at least eight percent of the total area of the city.

#### **A Green City for a Green Olympics**

The construction of the Olympic Village will not threaten the city's eco-system. Historical relics will be protected. Students will be encouraged to take part in tree planting activities on campus as well as other "green" activities off campus such as recycling paper. Shops, markets and retail outlets will play an important role in recycling and be encouraged to promote and sell green commodities.

## Appendix B. Beijing: Number, Value Added, and Energy Use of Industrial Enterprises by Sector, 2000

Sector	Enterprises with Independent Accounting Systems <sup>1</sup>		Large and Medium Enterprises		All Enterprises	
	No. enterprises (units)	Value Added (million yuan)	No. enterprises (units)	Value Added (million yuan)	Final Energy Use ktce <sup>2</sup>	ktce
Coal Mining and Dressing	145	778	1	560	129	88
Ferrous Metals Mining and Processing	19	43	1	26	29	20
Nonferrous Metals Mining and Processing	13	22			1	1
Nonmetal Minerals Mining and Processing	202	125	2	1	23	16
Other Minerals Mining and Processing	2	1			1	0
Food Processing	461	1,042	12	99	122	84
Food Manufacturing	523	3,055	11	541	229	157
Beverage Manufacturing	240	2,656	13	1,879	301	206
Tobacco Processing	2	571	1	570	13	9
Textile Industry	397	1,307	17	358	301	206
Garments and Other Fiber Products	792	1,743	13	214	110	75
Leather, Furs, Down and Related Products	142	170	5	(1)	15	10
Timber, Bamboo, Cane, Palm Fiber and Straw	199	188	2	9	16	11
Furniture Manufacturing	457	475	1	6	35	24
Papermaking and Paper Products	429	760	6	143	114	78
Printing and Record Medium Reproduction	891	2,115	49	1,201	146	100
Stationary, Educational and Sports Goods	207	333	6	124	19	13
Petroleum Processing and Coking Products	86	3,683	2	3,331	4,440	3,035
Raw Chemical Materials and Chemical Products	1,117	3,905	21	2,039	2,552	1,744
Medical and Pharmaceutical Products	220	2,530	21	1,251	120	82
Chemical Fiber	34	45	1	(1)	36	25
Rubber Products	101	325	5	114	101	69
Plastic Products	625	769	13	77	102	70
Nonmetal Mineral Products	1,484	3,718	32	1,230	2,393	1,636
Smelting and Pressing of Ferrous Metals	67	6,226	5	6,164	9,007	6,156
Smelting and Pressing of Nonferrous Metals	117	243	4	69	164	112
Metal Products	1,865	2,081	14	169	171	117
Ordinary Machinery Manufacturing	1,004	1,738	27	605	229	156
Special Purpose Equipment	814	3,127	31	1,729	217	148
Transport Equipment Manufacturing	1,081	2,835	40	1,883	382	261
Weapon and Ammunition Manufacturing	9	398	5	397	56	38
Electric Equipment and Machinery	775	2,615	26	524	145	99
Electronic and Telecommunications Equipment	606	17,317	48	10,092	188	128
Instruments, Meters, Cultural and Office Machinery	355	1,212	24	450	50	34
Other Manufacturing	475	630	9	29	26	18
Electric Power, Steam and Hot Water	55	4,496	10	4,135	1,219	833
Production and Supply of Gas	7	666	2	658	5	4
Production and Supply of Tap Water	9	581	1	370	88	60
Total	16,027	74,523	481	41,046	23,296	15,923

<sup>1</sup> Enterprises with independent accounting systems are financially independent, i.e., units that are not subsidiaries of other firms, that pay taxes, etc.

<sup>2</sup> ktce = thousand metric tons of standard coal equivalent. One tce equals 0.698 toe, 29.31 GJ, or 27.78 million Btus.

Source: Beijing Municipal Statistical Bureau. 2001. *Beijing Statistical Yearbook, 2001*. Beijing: China Statistics Press.

## **Appendix C. Beijing's Top 100 Industrial Firms by Sales Revenue, Pre-tax Profits, Profit-assets Ratio, and Total Assets**

Source: Beijing Municipal Statistical Bureau. 2001. *Beijing Statistical Yearbook, 2001*. Beijing: China Statistics Press.