FINPRO

Environmental Legislation in China (Mainland)

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List of Abbreviations:

APPCL	Air Pollution Prevention and Control Law
COD	Chemical oxygen demand
CPC	Communist Party of China
EIAs	Environmental impact assessments
EPB	Environment protection Bureau
EPL	Environmental protection law
EU	Europe Union
FYP	Five year period
GDP	Gross Domestic production
GHGs	Green House Gases
MEP	Ministry of Environmental Protection
MSW	Municipal solid waste
MSWM	Municipal Solid Waste Management
NDRC	National Development and Reform Commission
NGOs	Non-government organizations
NGSWT	National Guidelines on Solid Waste Tariffs
NPC	National People's Congress
PRC	People's Republic of China
SEPA	The National Environmental Protection Agency
SWM	Solid waste management
WPPCL	Water Pollution Prevention and Control Law

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1 INTRODUCTION

China is world's largest democracy with population of 1.1 billion. It is diverse country with number of languages, religions, cultures etc. During the past 30 years, the economic and industrial growth of the country has been extremely fast. This, combined with the population growth, has put an immense pressure on environmental capacity. The Federation of Finnish Technology Industries, and particularly its Environmental Branch, asked Finpro to conduct a study on the environmental issues in China; the main idea for the report was to help Finnish companies to bring out their expertise and to recognize their possibilities in the China market within the current and the impending legislative framework.

Thus, this report aims at giving a good overview picture of the environmental trends and legislation in China. The second chapter starts with introduction to China, Chinese political system and to the current economic situation accompanied with some relevant key facts.

After that the report moves on to environmental issues: Chapter 3 discusses the drivers for environmental conservation and sustainable development.

Chapter 4 is devoted to present the environmental target during 11th five year plan of China. Chapter 5 Environmental Legislation – is rather an extensive overview to the environmental legislation in China. It begins with describing the legislative environment structure, then moves on to describe the most important changes in the structure upgrade- China's new ministry of environmental protection and then give further analysis about the drivers of the environmental institutional change. Chapter 6 is about the most important environment related laws, rules, and standards. In the first part we give a big picture of China environmental legislation system and the main body of it. After that we give an analysis on the environmental legislation development trend. In the second part we try to give more detail analysis on some interesting areas such as solid waste management; water protection; E-waste management; energy efficiency; circular economy promotion etc. In the last part we present the regulations and standard highlighted in 2008.

Chapter 7 is about the International conventions that China participated and the Chinese activities of international cooperation in environmental protection.

Chapter 8 we give the answers on the question: what should be considered from environmental legislation point of view when establishing a factory in China?

Chapter 9 assesses briefly the opportunities and barriers for Finnish companies in China in the environmental legislative framework; what are the key projects and the investment focus in the current situation of China and how could Finnish expertise be utilized in the country. The conclusions are given in the chapter 10.

2 CHINA TODAY

2.1 Key Facts

Formal name: People's Republic of China (PRC)
Capital: Beijing
Constitution: After the founding of the PRC, four Constitutions have been formulated successively in 1954, 1975, 1978 and 1982. The present Constitution was adopted in 1982 and amended four times, most recently on March 14, 2004.
Top legislative power: The National People's Congress ("NPC") and its Standing Committee. Representing the people and all levels of people's congresses in China, the NPC supervises all state-level institutions. Its powers include electing the President of China.
Head of State: President Hu Jintao elected March 15, 2003.
Top administrative body: The State Council, which is the cabinet or chief administrative body of the PRC that includes the heads of all governmental agencies. Headed by Premier Wen Jiabao.
Land size: China has a landmass of 9,600,000 sq km, making it roughly the same area as the continental United States. The area of cultivated land in China was 123.5 million ha at the end of 2003, a decrease from 126 million hectares the previous year.
Location: In the east of the Asian continent, on the western shore of the Pacific Ocean.
Border countries: Korea, Mongolia, Russia, Kazakhstan, Kyrgyzstan, Tadzhikistan, Afghanistan, Pakistan, India, Nepal, Bhutan, Myanmar, Laos and Vietnam.
Climate: Extremely diverse; tropical in the south to subarctic in the north.
Geography: Mountains, high plateaus, and deserts in the west; plains, deltas, and hills in the east. The highest mountain in China is the highest mountain in the world: Mount Qomolangma. The mountain towers above all others at 8,848 m or 29,035 feet.
Population: China is the world's most populous country with a population estimated at about 1.294 billion by the end of 2003, one-fifth of the world's total. This figure does not include the Chinese living in the Hong Kong and Macao Special Administrative Regions, and Taiwan Province.
Population density: The population density is about 135 people per sq km, roughly four times greater than that of the U.S.
Population ethnicity: 91.6 percent of Chinese people are Han. The non-Han population includes 55 ethnic minorities, of which the major groups are the Zhuang, Manchu, Hui, Miao, Uygur, Yi, Tujia, Mongolian, and Tibetan.
Population distribution: Most of the population of China lives in the middle and lower reaches of the Yellow River, Yangtze River and Pearl River valleys, and the Northeast Plain. In 2000 a "go-west" campaign was launched by the government to help its relatively backward western and central areas catch up with more affluent eastern China.

Religions: The number of religious worshippers in China is estimated at well over 100 million, most of whom follow Buddhism. Other major religions are Daoism, Islam and Christianity in both its Catholic and Protestant forms.
Administrative divisions: China is made up of 23 provinces, five autonomous regions, four municipalities directly under the Central Government, and the especial administrative regions of Hong Kong and Macau.

Figure1 Map of China

2.2 Political System

The Party in Power: The Communist Party of China (CPC) is the party in power in the country. The CPC has both central and local organizations. At the top is the Central Committee and, while when it is not in session, the Political Bureau and its Standing Committee exercise the power of the Central Committee. Both the Political Bureau and its Standing Committee are elected by the plenary session of the Central Committee.
The Military: The Central Military Commission of the People's Republic of China is the highest state military organ with the responsibility of commanding the entire armed forces in the country. Led by a chairman and consisting of vice chairmen and members, the Commission is elected for a term of five years and can stand for reelection.
The Head of the State: The president, as the head of the state, promulgates laws, appoints the premier, vice premiers, state councilors, ministers of various ministries and state commissions, the auditor-general, and the secretary-general of the State Council, according to decisions of the National People's Congress and its standing committee. The president also confers awards and honorary titles of the state, issues order of special amnesty, and martial law, declares state of war and announces order of general mobilization.
The State Administrative Organ: The administrative branch of the state power is the Central People's Government and local people's governments. The State Council, another term for the Central People's Government, is the supreme administrative organ of state power.
The State Trial Organ: The people's courts are the trial organs of the state. The trial system consists of the Supreme People's Court, local people's courts and special people's courts such as the military court.
The State Prosecution Organ: The people's procuratorates are the legal supervision organs of the state. The prosecution system consists of the Supreme

People's Procuratorates, local people's procuratorates and special people's procuratorates such as the military procuratorate.

The Political Consultative Organ: The Chinese People's Political Consultative Conference is a united front organization under the leadership of the Communist Party of China and an organ for various other political parties, mass organizations and personages of various social circles to take part in the running of the state.

Social Organizations: Mass organizations are an important component in the political life in China. Despite the fact that they are non-governmental organizations, the All-China Federation of Trade Unions, the Communist Youth League of China and the All-China Women's Federation exercise, to a fairly large extent, some of the functions of the government. As a result, the tasks, the organizational setup and posts of leaders of some mass organizations are decided by organs of the central authorities. For the same reason, these organizations receive appropriations from the state treasury for funding.

2.3 The Central Administrative System

The central administrative system in the People's Republic of China includes: the central administrative organs under the system of the National People's Congress and the leadership of the central administrative organs over local administrative organs at various levels.

The central administrative organ is the State Council of the People's Republic of China. The State Council is the highest administrative organ of the state

2.4 The Local Administrative System

The local administrative system means the systems and practices of establishing administrative regional divisions and setting up local administrative organs in order to facilitate the implementation of local administration.

2.5 China’s administrative divisions

The entire country is divided into provinces, autonomous regions and municipalities directly under the Central Government; The provinces and autonomous regions are divided into autonomous prefectures, counties, autonomous counties and cities; The counties and autonomous counties are divided into townships, ethnic townships and towns; The municipalities directly under the Central Government and large cities in the provinces and autonomous regions are divided into districts and counties; and Autonomous prefectures are divided into counties, autonomous counties and cities. The Central Government may also set up special administrative regions.

Provincial governments are first-level local state administrative organs in China. There are 23 provinces in the country. Provincial governments implement local laws, regulations and decisions of the provincial people’s congresses and their standing committees, are responsible to and report on their work to provincial people’s congresses and their standing committees. Provincial people’s congresses and their standing committees have the power to supervise the work of provincial governments, change and annul inappropriate decisions of the provincial governments.

2.6 Economic Situation

In 2007, China's economy recorded its fifth year of double-digit growth, at an estimated 11.5%—marking the longest boom since reform began. It is forecasted the real GDP growth to slow to around 10.1% this year, declining gradually to around 9.5% in 2009, due to a weakening contribution from net exports. The government has attempted to rein in investment, but is unwilling to see growth slow to the extent that job creation is jeopardized in the lead-up to the Olympics. The challenge is to avoid a shaper-than-targeted slowdown, which could lead to severe job losses, massive corporate failures and a sharp increase in loan defaults. The government is in a strong position to deal with such problems.

At the end of December 2007, the State Council announced that central government fiscal revenues for the year would be Rmb401bn (US$53bn) more than it had forecast. In the past few years, China has been a major importer of oil, steel, aluminum, copper and other base materials, propelling prices of these commodities to record levels.

In oil, China has accounted for one-third of the increase in global demand. Chinese leaders believe the country has entered an optimal growth period, just as Japan did in the 1970s-80sand East Asia economies (HongKong, Singapore, Taiwan, South Korea) did in the 1980s and early 1990s. As long as China can maintain growth at a reasonable level with moderate inflation, it is on track to becoming a middle-income country. Problems such as poverty, a growing income gap, industrial wastage, ecological devastation and a fragile financial system can be better tackled in a growing economy than a stagnant one.

The near-term risks to this upbeat scenario include a sharper-than-anticipated slowdown in the global economy, particularly in the US, which may take the wind out of China's booming export sales. In the event of a sharp drop in export growth, more goods would be diverted towards the domestic market, pushing supply up and prices down, and possibly causing a return to deflation. This would hit profits at manufacturers, with implications for the banking sector as firms encountered problems repaying loans. In addition, as overcapacity became more apparent, investment would be likely to fall, with a knock-on effect on private demand as employment suffered.

As these trends would take time to feed through, the biggest impact on economic growth would be felt in 2009. It is, however, unlikely that there will be a sharp decline in export growth. More broadly, China's economic growth has not followed the cycle in the US. For example, when the US was experiencing a boom in the late 90s, China was in the midst of a slowdown. In 2002, the US was in a recession while growth in China was accelerating. Indeed, inflationary pressures are building in the economy. Some economists fear a scenario where inflation gets out of control resulting in the authorities needing to clamp down resulting in social unrest similar to the inflationary crises in 1988-89 and 1993-96. In the past, the authorities have taken action too late.

China's economy has been in overdrive for the past five years. Gross fixed investment spending remains the largest component of GDP. Surging

investment is fuelling overcapacity in many sectors, undercutting profits and leading to continued strong export growth. In December 2007, the government announced that its monetary policy stance will change from "prudent" to "tight" in 2008, for the first time in ten years, indicating that the government is getting serious about cooling the economy.

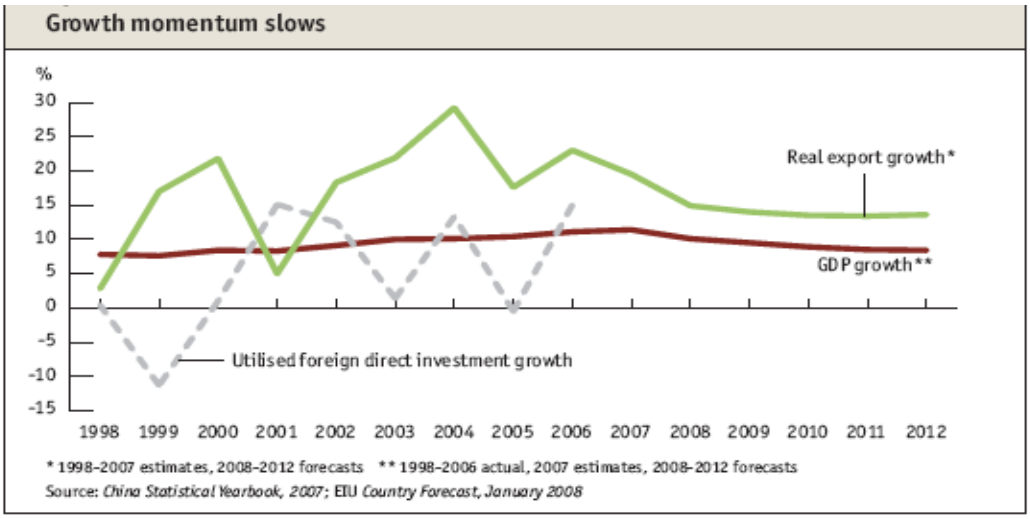
The government is keen to stimulate private consumption in order to bring about sustainable economic growth. Excessive dependence on fixed-asset investment has proved inefficient and wasteful. However, the government will run the risk of dampening private consumption if it clamps down too hard on the real-statutory. The government has in fact encouraged housing construction for low and middle-income households—only trying to restrain investment at the top end of the market. Property prices in frothy markets like Shenzhen cooled in the second half of the year, with prices declining by 10-15% in the last few months of 2007, while Shanghai's October property sales were half those in June. In December 2007, Shanghai's local government announced that initial deposits in a government land sale in January 2008 must be paid in renminbi, making it difficult for foreign investors to participate. Previously deposits in US dollars, HK dollars, Euro and yen had been accepted.

In Beijing, luxury property prices continued to increase ahead of the Olympics. The city was Asia's second-strongest performing luxury property market in 2007, after Singapore. Property prices have cooled since the People's Bank of China and China Banking Regulatory Commission increased the initial deposit required by those seeking a mortgage for a second home from 30% to 40% deposit. Such measures do not, however, restrict developer funding which has driven the construction boom. The overall result has been more land sales and a faster pace of construction. Lenders have been criticized for not checking the creditworthiness of borrowers, sparking comments that China has more sub-prime borrowers than the US. It is, however, more difficult for individuals to declare bankruptcy in China and thus avoid repaying mortgage loans. The real-estate sector accounts for almost one-quarter of fixed-asset investment, which contributes half of China's real GDP growth.

Table 1 Forecast Summary of China's Economy

Forecast summary of China's economy										
	2012[c]	2011[c]	2010[c]	2009[c]	2008[c]	2007[b]	2006[a]	2005[a]	2004[a]	2003[a]
Real GDP growth (%)	8.4	8.5	8.9	9.5	10.1	11.4	11.1	10.4	10.1	10.0
GDP (US$ bn)	7,863	6,728	5,742	4,861	4,084	3,315	2,774	2,303	1,936	1,648
GDP per head (US$)	5,780	4,980	4,280	3,640	3,070	2,510	2,110	1,760	1,490	1,280
Budget balance (% of GDP)	-0.1	-0.2	-0.3	-0.3	0.1	0.2	-0.8[b]	-1.2	-1.3	-2.2
Consumer price inflation (av; %)	3.8	3.8	3.7	3.8	3.8	4.8	1.7	1.8	3.8	1.1
Exchange rate Rmb:US$ (av)	6.1	6.3	6.6	6.8	7.1	7.6	8.0	8.2	8.3	8.3
Commercial banks' prime rate (%)	7.8	7.8	7.6	7.8	8.1	7.6	6.1	5.6	5.6	5.3
Trade balance (US$ bn)	459.6	464.3	446.7	404.4	344.6	304.0	217.7	134.2	59.0	44.7
Current-account balance (US$ bn)	583.6	586.8	565.8	514.6	447.3	375.6	249.9	160.8	68.7	45.9
Current-account balance (% of GDP)	7.4	8.7	9.9	10.6	11.0	11.3	9.0	7.0	3.5	2.8
Total foreign debt (US$ bn)	778.3	664.3	571.8	492.9	426.4	364.7	317.0[b]	281.6	247.7	208.5
Debt-service ratio, paid (%)	1.7	1.8	1.9	2.0	2.0	2.2	2.6[b]	3.0	3.3	7.1
Source: EIU *Country Forecast*, January 2008									a actual b estimates c forecasts	

Table 2 Growth Momentum Slows



3 DRIVERS FOR ENVIRONMENTAL CONSERVATION AND SUSTAINABLE DEVELOPMENT

3.1 Sustaining the growth in long run

For a country like China, with giant economy (the fourth largest in the world) that has been growing as an average of 7 percent for over a decade now, and plans to grow even faster in the future, environment management is of special importance. For example, by 2025, more than half of China's population (by then ~1,3 billion) will be living in urban centers. Within just 10 years, five of China's cities will be among the 30 largest in the world, with traffic congestion and heightened pollution to match. Already today China is the sixth largest and the second fastest growing producer of Green House Gases (GHGs).

The consequences of such rapid urbanization and increasing industrial activity for the environment can be imagined. They will put enormous additional pressure on China's already strained city infrastructure, and lead to heightened demands for clean water, waste treatment and air pollution controls. To sustain the growth in the long run, will call for strong and imaginative policies to minimize the negative impact on the living conditions of the urban population.

3.2 Global and local pressure

General global pressure on reducing GHGs and other emissions is driving also China towards more sustainable direction; if China wants to attract international investments and be the location for global manufacturing and business in general, it must follow the global tightening standards and restrictions. China also plays an important role in several significant international initiatives concerned with the environment and is a party to key multilateral agreements. The global focus is thus more and more on China.

There is also a number of active, both international and domestic, pressure groups like NGOs which are demanding for increased attention towards

environmental issues. Citizens suffering from the pollution and polluted environment are expressing their concerns. More and more people also travel and live abroad and after returning to China place demands for cleaner environment.

3.3 China's image

As mentioned before, the global focus is currently on China. There are also a number of large China companies which are aggressively investing overseas. These companies want to follow international standards to preserve their image. China as a country, in turn, wants to position itself as the tourist destination of the world, which means that at least tourist hotspots are to be cleaned up.

3.4 Cost savings

China is dependent on oil-imports. With increasing global oil prices, running manufacturing units is becoming more and more expensive. Thus companies have to utilize all the possibilities to become more energy efficient. Renewable sources, which are already of high priority, are to be used increasingly to keep the oil-bill acceptable. These cost savings also apply to other activities like efficient use of materials.

3.5 Legislation

Legislation alone does not guarantee sustainable development. The situation is extremely tricky in the country like China, where implementation is very difficult. Rules, however, can work as a driver towards conservation: for instance those that are inbuilt in the permission system, force industries to take environmental issues into consideration.

The Supreme Court of China has recognized and accepted the concept of sustainable development1 as an important principle in maintaining the right balance between the environment and development. In one case the Court opined that the principles of sustainable development are part of customary international law and thus there is now difficulty in accepting them as part of the domestic law. Since the first statement, this observation has been quoted by various judges of the Supreme Court while deciding on environmental issues. It can thus be concluded that the sustainable development has been accepted as the law of the land. Supreme Court's intervention in general is important when enforcing environmental legislation.

3.6 Proactive individuals and opinion leaders

Some of the leaders – both in private and public sector – are actively speaking for a cleaner environment. These leaders can make a significant change in a company or in certain locality.
Public concern and media coverage on environmental issues have also reached new levels of intensity. "Environmental protection" is widely recognized as an issue drawing widespread public concern in China. An increasing number of

Chinese citizens appear to reflect this concern, despite the fact that they are not necessarily "victims" of environmental contamination.
Chinese media organizations are given greater freedoms in the environmental arena, in particular, to explore environmental degradation and non-compliance with environmental law
International influences will continue to play a important role in China environmental law and policy. With the Beijing Olympics fast approaching, the international community is paying increased attention to Beijing and China. International initiatives, in particular those of the European Union, will continue, at least partially, to influence and shape China's legislative and rulemaking agendas.

4 ENVIRONMENTAL TARGET DURING 11TH FYP

Environmental Protection Work Entering New Stage during China 11th FYP (2006-2010)

CCCPC and the State Council put environmental protection at a more important strategic position. This provides a foundation for environmental protection work aiming at implementing the scientific outlook on development and development of a socialist harmonious society. Environmental protection is facing unprecedented opportunities. The shift of economic growth mode and accelerated economic restructuring will provide a good foundation for addressing structural and regional environmental pollution and ecological destruction. Increasing national strength provides a strong physical and technical support to environmental protection. Deepening reform of economic system and administrative institutions creates a good condition for the innovations in environmental protection work mechanism. Wide spread increase of public environmental awareness is a driving force for environmental protection. There is a big change in the relationship between the environment and development. Environmental protection has become a key task for modern development. Environmental capacity becomes an important base for the design of regional layout. Environmental management becomes an important tool for structural adjustment. Environmental standard becomes an important market access and environmental cost becomes an important factor for the pricing mechanism. All these major changes mark that environmental protection in China is entering the stage where it optimizes economic growth. So China has challenges and opportunities, difficulties and hopes.

It is expected that by the year 2010, SO2 and COD emissions will be under control, environmental quality of key regions and cities will enjoy some improvement, ecological environmental degradation trend will be basically curbed and people will live in safe environment in terms of nuclear and radiation.

Box 1 Major environmental protection indicators during the "11th Five Year Plan" period				
	Indicator	2005	2010	Increase & reduction during the "11the Five-Year Plan" period
1	COD (10000 t)	1414	1270	-10%

2	SO2 (10000 t)	2549	2295	-10%
3	Percentage of the water sections under national monitoring program failing to meet Grade V National Surface Water Quality Standard (%)	26.1	< 22	-4.1 percentage points
4	Percentage of the water sections (of 7 big waters of China) under national monitoring program meeting Grade III National Surface Water Quality Standard (%)	41	> 43	2 percentage points
5	Number of days in which urban air quality of key cities is superior to Grade II National Air Quality Standard exceeding 292 days (%)	69.4	75	5.6 percentage points

Key Areas

In the "11th Five-Year Plan" period, China will take the prevention and control of pollution as the top priority and ensuring safe drinking water for urban and rural people as the key task. With overall promotion and breakthrough in focal areas, China will practically address the pre-eminent environmental problems threatening public health and affecting sustainable economic and social development.

Box 2 Name of key cities for environmental protection (113)
Municipality: Beijing, Tianjin, Shanghai and Chongqing Provincial capitals: Shijiazhuang, Taiyuan, Hohhot, Shenyang, Changchun, Harbin, Nanjing, Hangzhou, Hefei, Fuzhou, Nanchang, Jinan, Zhengzhou, Wuhan, Changsha, Guangzhou, Nanning, Haikou, Chengdu, Guiyang, Kunming, Lhasa, Xi'an, Lanzhou, Xining, Yinchuan and Urumqi. Cities under separate plan of the State Council: Dalian, Qingdao, Ningbo, Xiamen and Shenzhen Other cities: Qinhuangdao, Tangshan, Baoding, Handan, Changzhi, Linfen, Yangquan, Datong, Baotou, Chifeng, Anshan, Wushun, Benxi, Jinzhou, Jilin, Mudanjiang, Qiqihar, Daqing, Suzhou, Nantong, Lianyungang, Wuxi, Changzhou, Yangzhou, Xuzhou, Wenzhou, Jiaxing, Shaoxing, Taizhou, Huzhou, Ma'anshan, Wuhu, Quanzhou, Jiujiang, Yantai, Zibo, Tai'an, Weihai, Zaozhuang, Jining, Weifang, Rizhao, Luoyang, Anyang, Jiaozuo, Kaifeng, Pingdingshan, Jingzhou, Yichang, Yueyang, Xiangtan, Zhangjiajie, Zhuzhou, Changde, Zhenjiang, Zhuhai, Shantou, Foshan, Zhongshan, Shaoguan, Guilin, Beihai, Sanya, Liuzhou, Mianyang, Panzhihua, Luzhou, Yibin, Zunyi, Qujing, Xianyang, Yan'an, Baoji, Tongchuan, Jinchang, Shizuishan and Karamay.

5 ENVIRONMENTAL LEGISLATION

5.1 China environment legislative structure

China pays great attention to environmental legislative work and has now established an environmental statutory framework that takes the Constitution of the People's Republic of China as the foundation and the Environmental Protection Law of the People's Republic of China as the main body.

The Constitution of the People's Republic of China stipulates, `the state protects and improves the living environment and the ecological environment, and prevents and remedies pollution and other public hazards," and ``The state ensures the rational use of natural resources and protects rare animals and plants. The appropriation or damage of natural resources by any organization or individual by whatever means is prohibited."

The Environmental Protection Law of the People's Republic of China is the cardinal law for environmental protection in China. The law has established the basic principle for coordinated development between economic construction, social progress and environmental protection, and defined the rights and duties of governments at all levels, all units and individuals as regards environmental protection.

China has enacted and promulgated many special laws on environmental protection as well as laws on natural resources related to environmental protection. They include the Law on the Prevention and Control of Water Pollution, Law on the Prevention and Control of Air Pollution, Law on the Prevention and Control of Environmental Pollution by Solid Wastes, Marine Environment Protection Law, Forestry Law, Grassland Law, Fisheries Law, Mineral Resources Law, Land Administration Law, Water Resources Law, Law on the Protection of Wild Animals, Law on Water and Soil Conservation, and Agriculture Law.

The Chinese government has also enacted more than 30 administrative decrees regarding environmental protection, including the Regulations for the Prevention and Control of Noise Pollution, Regulations on Nature Reserves, Regulations on the Prevention of and Protection Against Radiation from Radio Isotopes and Radioactive Device, Regulations on the Safe Administration of Chemicals and Other Dangerous Materials, Provisional Regulations on the Prevention and Control of Water Pollution in the Huaihe River Drainage Area, Regulations Governing Environmental Protection Administration in Offshore Oil Exploration and Development, Regulations on the Control of Marine Wastes Dumping, Regulations for the Implementation of the Protection of Terrestrial Wildlife, Provisional Regulations on the Administration of National Parks, Regulations on the Protection of Basic Farmland. In addition, departments concerned have also issued a number of administrative rules and decrees on environmental protection.

To implement the state's environmental protection laws and regulations, people's congresses and people's governments at local levels, proceeding from specific conditions in their own areas, have enacted and promulgated more than 600 local laws on environmental protection.

Environmental standards are an important component of China's environmental statutory framework. They include environmental quality standards, pollutant

discharge or emission standards, basic environmental criteria, criteria for samples, and criteria for methodology. The environmental quality standards and pollutant discharge or emission standards are divided into state standards and local standards. As stipulated in Chinese law, the environmental quality standards and pollutant discharge standards are compulsory standards, and those who violate these compulsory environmental standards must bear the corresponding legal responsibility.

In the process of establishing and improving the environmental statutory framework, China attaches equal importance to environmental law enforcement and environmental legislation. For four years in a row, China has conducted nationwide checks on the enforcement of environmental legislation to seriously deal with acts of polluting and damaging the environment and severely punish environmental law violations. China pays great attention to supervision exercised by the people and media over law-breaking activities regarding the environment -- it has opened channels for the masses of people to report on environmental problems and adopted measures for the media to expose environmental law-breaking activities.

But it should be pointed out that China's environmental legislative work needs to be further improved. For instance, some areas still remain uncovered, some contents are yet to be amended or revised and there are still the phenomena of not fully observing or enforcing laws. Therefore, to make continuous efforts to strengthen environmental legislative work remains an important strategic task.

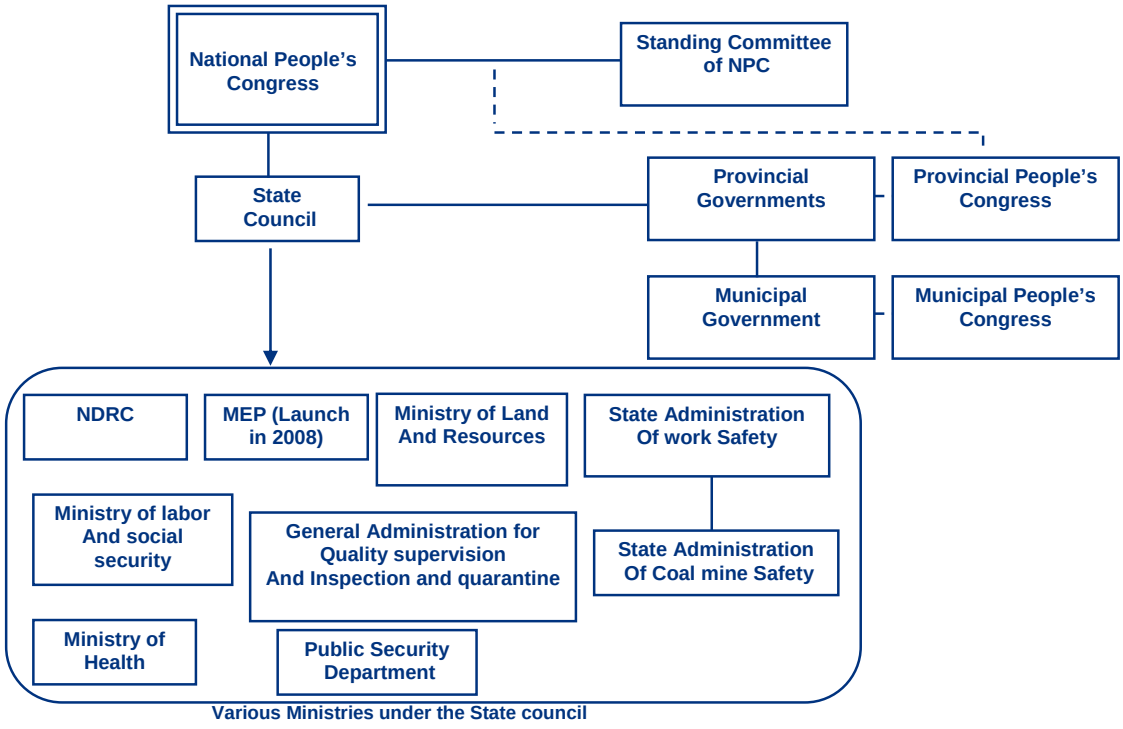
China attaches equal importance to the establishment of an environmental administrative system. It has established a system in which the National People's Congress enacts the laws, governments at different levels take responsibility for their enforcement, the administrative departments in charge of environmental protection exercise overall supervision and administration and the various departments concerned exercise supervision and administration according to the stipulations of the law.

The National People's Congress has established an Environment and Resources Protection Committee, whose work it is to organize the formulation and examination of drafted laws related to environmental and resources protection and prepare the necessary reports, exercise supervision over the enforcement of laws governing environmental and resources protection, put forward motions related to the issue of environmental and resources protection, and conduct exchanges with parliaments in other countries in the field of environmental and resources protection. The people's congresses of some provinces and cities have also established corresponding environmental and resources protection organizations.

The Environmental Protection Committee under the State Council is made up of leaders of various related ministries under the State Council. It is the State Council's consultancy and coordination agency for environmental protection work. Its major tasks are studying and examining the principles, policies and measures relating to coordinative development of the country's economy and environmental protection, giving guidance to and coordinating efforts in tackling major environmental problems, exercising supervision over and conducting checks on the implementation of the environmental protection laws and regulations by various localities and departments, and promoting the development of environmental protection undertakings throughout the country.

The people's governments at the provincial, city and county levels have also established corresponding environmental protection committees.
The National Environmental Protection Agency (which is updated to be Ministry of environmental protection after March of 2008) is the competent environmental protection administration agency under the State Council, whose task it is to exercise overall supervision and administration over the country's environmental protection work. The people's governments at the provincial, city and county levels have also successively established environmental protection administration departments to carry out overall supervision and administration of the environmental protection work in their localities. At present, there are nationwide more than 2,500 environmental protection administration departments above the county level with a total staff of 88,000 engaged in environmental administration, monitoring, inspection and control, statistics collection, scientific research, publicity and education.
Environmental protection organizations have also been established in comprehensive administration departments, resources administration departments and industrial departments under governments at various levels to take charge of related environmental and resources protection work. Most of China's large and medium-sized enterprises have also set up environmental protection organizations responsible for their own anti-pollution work and the promotion of cleaner production. At present, the total number of various types of environmental protection workers employed by the various departments and enterprises exceeds 200,000.

Figure 2 China environment legislative structures

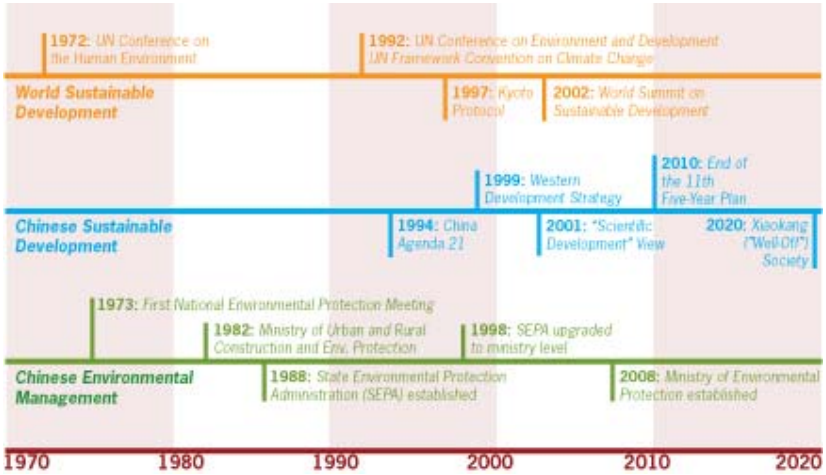


5.2 China's New Ministry of Environmental Protection (MEP)

March 28, 2008, saw the launch of China's Ministry of Environmental Protection (MEP). As stated in its mission, this new cabinet-level ministry will take responsibility from SEPA for China's environmental governance. MEP is tasked to develop and organize the implementation of environmental protection; to manage all related planning, policy and standards; and to coordinate across jurisdictions and levels of government to solve the country's major environmental problems.

The creation of the MEP is an example of the widespread reforms that have been transforming China's government in the past decades. Since 1982, five waves of major reforms have reduced the number of government ministries from 52 to 27. The latest round of these has aimed to create a "small government in a big society", as public-sector priorities have shifted from economic development to regulation and public service. However, such a bold long-term transformation will only be possible by maintaining current rates of economic growth while simultaneously reducing inflation pressure and preserving central government macroeconomic performance. The Chinese government will also need to strike the dedicate balance between development, environment and social

Figure 3 Milestones in Chinese Environmental Governance



5.3 Environmental Drivers of Institutional Change

After more than 30 years of rapid economic growth and development, China is facing unprecedented challenges in its efforts to protect its environment and natural resource base. The rapid deterioration of the nation's environmental quality and depletion of its natural resources are threatening the lives and health of the largest population in the world and the very potential for sustained growth of the economy. Some of the most pressing challenges include:

Air Quality: Two of the Blacksmith Institute's 10 most polluted cities are in China. Three major city clusters in China–Beijing-Tianjin-Tangshan, the Yangtze River Delta and Pearl River Delta–all face significant air pollution problems. Zhong Nanshan , head of the Guangzhou Institute of Respiratory Diseases, warned that

most people older than 50 experience "black lung" as result of air pollution in Guangzhou city. With the 2008 Olympic Games right around the corner, Chinese officials in Beijing have introduced an even-odd license plate number system to control the number of vehicles on city roads after July 20 in an effort to improve air quality for the athletes and visitors.

Water Pollution: Huge blooms of blue-green algae have led to severe water pollution at Taihu Lake in the Yangtze Delta both this summer and last. According to the 2006 China Environmental Condition Communiqué, 28 percent of the nation's 745 water-quality monitoring sections are under standard V, which is the lowest level of China's Environmental Quality Standards for Surface Water. For more than ten years, the central government has poured money into pollution treatment projects on the Huai River and Dianchi Lake, with little success. Only 43.2 percent of the 46 sections of the river's 44 major tributaries passed quality tests, according to a 2007 report by the Huai River Committee.

*Climate Change:*The results of China's Assessment Report on Climate Change show that annual average air temperature has increased by 0.5-0.8°C over the last century (slightly higher than the average global temperature rise), with most of the temperature rise observed in the last 50 years. Along China's coasts, sea levels have risen an average of 2.5 mm annually over the last 50 years. China's mountain glaciers have also retreated, and the trend is accelerating. The geography and climatic conditions of the country already give rise to frequent extreme events. Recently, though, extreme events have been exacerbated by the complexity and fragility of China's ecosystems, and by the fact that its three largest urban agglomerations and industrial centers are in coastal areas. In rural areas, agricultural output could be reduced by between 5 and 10 percent by 2030. The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) warned that China will be one of the world's most affected regions if the climate continues to change as predicted.

The Public Demands Good Environmental Governance
Pan Yue, Vice Minister of Environmental Protection, estimates that two environmental incidents occur every three days in average around China, threatening the government's goal of creating a "Harmonious Society". In 2005, the formal public hearing held in the wake of the controversy surrounding the Yuan Ming Yuan Park, which used impermeable membranes on the bottom of the Park's lakes to save water, but impacted both the area's ecosystems and nearby historic cultural sites, was the first of its kind in the environmental arena. The project was stopped after this hearing.

Since then, Chinese people have become more engaged in the environmental movement. Increasing environmental awareness and concern for environmental justice have led to widespread environmental protests. In June 2007, the citizens of Xiamen, a city on the southeastern coast known for its environmental awareness and ecotourism industry, demonstrated against the construction of a chemical factory slated to be built nearby. People in Shanghai protested against an extension of the city's Maglev system in January 2008, and in May citizens in Chengdu demonstrated against the construction of a petrochemical factory and oil refinery. With the release of The Regulations on Government Disclosure of

Information in May 2008, calls for information transparency and public participation will continue to increase.

Figure 4 Environmental Protests in Xiamen

At left, Xiamen is widely known for its natural beauty and was recently ranked one of China's cleanest and most livable cities. At right, a demonstrator protests against the construction of a chemical plant in Xiamen, holding a sign that says "Protect the Health of Future Generations."

With increasing calls for action to ensure environmental quality, the government has responded with mixed results. For example, billions of dollars have been spent to clean up pollution on the Huai River, one of China's major rivers, but this effort has resulted in little real progress. The issue here is decentralization: the local environmental governor is nominated and assigned by the local officer, and all local environmental improvement projects are funded solely by the local government. While the central government may have a strong will when it comes to the environment, local reluctance is still a big problem. Local governments lack both the incentives and the capacity to implement well-developed projects. High-level Chinese leaders often promise "clean water and clean air for everybody," but this simple-sounding goal is, in reality, not an easy job.

Elevation of the MEP to the cabinet level is a promising step, but this does not guarantee results. Although its status improved over the last 30 years, the environmental administration is still comparatively weak in the cabinet. The Environmental Protection Storm, initiated by MEP Vice Minister Pan Yue, is both a national campaign to promote environmental awareness and an example of how the MEP has had to use relatively creative methods to consolidate its power in the government. Notable setbacks, such as the MEP's failure to implement a new "green GDP" evaluation system given the complexity of greening the GDP, show that the ministry is not yet as efficient and effective as other core ministries like the National Development and Reform Commission (NDRC), China's macroeconomic management agency.

To better understand the Chinese system of environmental management, it is helpful to compare it to analogous systems in the United States and European Union structure.

Learning from experiences in the United States, China established five regional inspection offices in 2006 in an effort to foster regional coordination. But, in contrast to the U.S. system, the province is the basic political and economic unit in China. Environmental agencies at the provincial level are not staffed by the central government and are funded exclusively by local governments. This disconnect has effectively turned provincial "environmental protection officers"

into professional workers with no real power. The five regional-level inspection offices will have little influence over the situation on the ground, as they still do not have the power to coordinate the provincial offices.

Personnel: In a country of 350 million people, the U.S. Environmental Protection Agency has more than 17,000 employees, not including outside contractors. China, a country with four times the population and significantly more pollution per capita, has only about 300 workers at the MEP in Beijing and perhaps 30 people in each of the five regional inspection offices. Including affiliate agencies and institutes, the total number of personnel can perhaps reach 2,600. Some important support comes from the affiliated research institutions, but the ministry remains weak, lacking the decision-making capacity and financial resources of many other agencies.

Enforcement: China's central regulations and rules do not have the same force as U.S. or European laws. As one of its key instruments, China's central government issues five-year plans that set general national targets, which in turn are delegated to local governments; promotions for government workers are based on how well they meet those goals. The current 11th Five-Year Plan contains two major environmental goals: a 20-percent improvement in energy efficiency and 10-percent decreases in major pollutants. But as long as China's promotion system is solely based on GDP growth, any government mandates to curb pollution will remain secondary, and any environmental targets will not be fully enforced on the ground.

6 THE DEVELOPMENT OF CHINA'S ENVIRONMENTAL LEGISLATION

6.1 Introduction

China's first step in environmental protection was in 1972 when Premier Zhou Enlai sent a representative to the Stockholm Conference on Human Environment, despite internal opposition within the Communist Party. Legal protection of the environment was not to become a reality until years later; it was only in 1978, when Deng Xiaoping started wide-sweeping reforms, that the drive to establish a functioning legal system in China was initiated. At this time, legislation had to be drafted from scratch because of the demolishment of the entire legal system during Mao's Cultural Revolution of 1966-76. In its haste to re-establish a functioning body of law, the Chinese Communist Party developed legislation in a centrally planned top down manner, either through legal transplantation from abroad or by directly translating policy into statute form. Uncertain of the consequences these new laws might bring, the country followed a 'crossing the river by feeling the stones' approach in legislating. Hence overarching legal principles are not the basis of these instruments of law; rather, a pragmatic approach was taken, whereby laws were tested on a trial basis. As such, China's first and most general environmental statute—the Environmental Protection Law of the People's Republic of China—was adopted in 1979 for trial implementation, but was only to be enacted into its final form a full ten years later.While the Chinese legal system is relatively young, the government has incorporated environmental concerns since the very beginning. The CCP has included environmental goals in its five-year plans from 1980 onwards, and has

enshrined its commitment to environmental protection in Article 26 of the 1982 Constitution: The state protects and improves the living environment and the ecological environment, and prevents and Structural Impediments to Implementing China's Anti-Pollution Laws controls pollution and other public hazards. […] Due to the central government's initiative, China has in the past thirty years enacted hundreds of environmental statutes and regulations. The National People's Congress (NPC) acts as China's supreme legislative organ, with powers to enact and amend basic laws; however, most legislation is actually enacted by the NPC Standing Committee, since the NPC is in session only once a year. The State Council, China's chief executive body, has the power to adopt administrative measures and enact administrative regulations and rules. On the provincial level, people's congresses and their respective standing committees may adopt local regulations provided they do not contravene higher-level statutes and regulations. The main regulatory agency that deals with environment on the national level is the State Environmental Protection Administration (SEPA) at that time. It has been given the duties of developing national policies and laws for environmental protection, supervising the utilization activities of natural resources that impact ecological environment, and investigating and handling major environmental pollution accidents and ecological damage cases. On the provincial and local (township and county) levels, Environmental Protection Bureaus (EPBs) are responsible for enforcing compliance with national environmental laws and regulations within their jurisdiction. EPBs form part of local governments, and their duties for environmental protection include drafting local laws, issuing administrative regulations, carrying out environmental monitoring and control, and providing education and training on environmental issues

6.2 Main body of environmental Legislation: EPL, WPPCL & APPCL

China's main legislation on environment is the Environmental Protection Law of 1989 (EPL), which contains general provisions for pollution control, environmental impact assessments (EIAs) and the supervision and management of environmental protection by the state. The basic obligation and right is provided in Article 6: All units and individuals shall have the obligation to protect the environment and shall have the right to report on or file charges against units or individuals that cause pollution or damage to the environment. Chapter IV of the EPL deals with the prevention and control of environmental pollution. All units must adopt effective measures to prevent and control pollution and harms caused by waste emissions. Best technologies are to be used for the low discharge and treatment of pollutants and the comprehensive utilization of waste. Construction projects must be approved by SEPA (or the relevant EPB) according to an environmental impact statement. Finally, enterprises and institutions discharging pollutants in excess of local standards are liable to pay fines and are responsible for eliminating and controlling pollution.

In addition to the EPL, there are laws that deal specifically with pollution. The Water Pollution Prevention and Control Law (WPPCL) was enacted in 1984, with the most recent amendments in 1996.28 As with the EPL, it foresees a role for individuals to prevent pollution, as stipulated in Article 5: legislation later—as was the case for the Environmental Protection Law. Another technique was to bring about legislation containing abstract general rules, to be specified later

using easily changeable lower-level administrative regulations. Both of these techniques were essentially piecemeal: […] the piece-meal approach meant that legislation was highly abstract and not too strict, making it adaptable and feasible, but also uncertain and inadequate. As a result, the abstract nature of many environmental provisions makes them seem more like 'policy statements and propositions of ideals' rather than laws. Actions are encouraged but not required, or if they are, little guidance is provided as to procedures and specific goals. For example, the use of the word 'should' instead of stronger terms such as 'shall' or 'must' is frequent. Vague rights and obligations are useless as they are impossible to implement and enforce.

Recognizing this, Chinese leadership strove to create more specific legislation, resulting in stricter environmental statutes such as the amendments to the Air Pollution Prevention and Control Law (APPCL) in 2000 and the Environmental Impact Assessment Law (EIA) enacted in 2002.49 However, weak language continues to plague legislation due to a practice of enacting so-called 'policy laws': laws that do not set out specific requirements but rather outline general policies .For example, the Promotion of Clean Production Law (2002) states in Article 20: When products and packaging are designed, their influences on mankind and natural environments during their life-cycle must be considered and the Environmental Impact Assessment Law (2002), and the Promotion of Clean Production Law (2002).43 Indeed, China has created a wide array of environmental laws and institutions, comparable to that in many Western countries. It is not due to the lack of adequate legislation that the pollution problem continues unabated.

6.3 Environmental legislation development trend

In the 11 FYP (2006-2010), China will strive for policy innovation, combine government regulation with market mechanism, and combine regulation constraint with policy incentives on the environmental legislation development. Efforts will be made to further improve the new mechanism for environmental protection guided by government, promoted by market force and participated by the public.

Strengthen rule of law and carry out strict supervision

China realizes that strengthening the rule of law is the key for the prevention and control of pollution and ecological conservation. It is also an effective approach to take part in comprehensive decision making on environment and development and promote fundamental shift of economic growth mode. China will adopt strong measures to address such problems as incomplete regulations, difficulty in law enforcement, low infringement cost, no sanction to lawbreakers and loose law enforcement.

Improve laws, regulations and standard system China will speed up the amendment and improvement of existing laws, regulations and standards and fill the law gap.

The focuses will be the amendment of the Environmental Protection Law of the People's Republic of China and Law of the People's Republic of China on the

Prevention and Control of Water Pollution. Relevant authority will formulate the draft laws and regulations in relation to such aspects as soil pollution, chemical pollution, ecological conservation, bio safety, genetic resources, ozone layer protection, nuclear safety, circular economy, environmental monitoring and compensation for environmental damages. Local governments shall improve local regulations, too. China will improve technical specification and environmental standard system, identify environmental limits in a scientific way and encourage more stringent local emission standards. With active cooperation with legal department, the authority and effectiveness of environmental law enforcement will be ensured through legal means.

Improve law enforcement supervision system: According to the requirements of "clear definition of power and responsibilities, standardized conduct, strong supervision and efficient operation", the authority will identify law enforcement responsibilities and procedures, raise law enforcement efficiency, and enhance law enforcement supervision. It will see to it that laws are fully observed and strictly enforced and that lawbreakers are duly punished. The authority will further carry out special campaigns on streamlining enterprise that discharge pollutants against the law and ensuring public health and strictly investigate and sanction any environmental infringements and cases. It will keep on the inspection on environmental safety; focus on the investigations on environmental safety of petroleum, chemicals and metallurgical enterprises along rivers or in areas with dense population to eliminate any hidden environmental problems. It will enhance the supervision and administration of such substances as hazardous chemicals, hazardous waste and radioactive waste to minimize environmental risk. Local governments at all levels and key enterprises should develop emergency response program, establish necessary emergency response facilities in order to raise the capacity in handling sudden environmental events.

Focus on carrying out three environmental management systems: Carry out total control system for pollution emissions. The authority will divide the planned target for total control of the emissions of major pollutants down to grass-root level and enterprises with emissions. It will strengthen the monitoring and statistics on pollution emissions. It will achieve the total emission control target with combined application of various environmental management systems and tools including emission permit, emission fee, compulsory phasing out, corrections within a given period of time and environmental impact assessment (EIA).

China will strengthen EIA system and "Three synchronizations system"

Installations for the prevention and control of pollution at a construction project must be designed, built and commissioned together with the principal part of the project. On the bases of accelerated trial work, China will facilitate EIA for various development projects and plans in order to prevent environmental pollution and ecological damage at the source. The authority will carry out strict management on EIA and "Three synchronizations" of construction projects, enhance the administration on environmental impact assessment qualifications, raise EIA work quality and carry out EIA responsibility system. It will strictly check and accept the "Three synchronizations" and reverse the situation as soon as possible where local authorities emphasize review & approval but supervision, focus on pre-construction assessment but ignore post-construction assessment,

commencement of construction without approval and putting into operation without check & acceptance. Implement environmental target responsibility system. The "11th Five-Year Plan" environmental targets and tasks will be fragmented to local government at all levels that will carry out their own target. China will set up an examination mechanism on environmental management performance and mainstream environmental protection into the economic and social development evaluation system. It will identify scientific assessment indicators and integrate them into the comprehensive evaluation system for the performance of party and government officials. It will establish environmental protection accountability and awarding & punishment system and strictly carry out the "Provisional Regulations on the Punishment of Behaviors that Violate Environmental Protection Laws or Disciplines".

China will consolidate and deepen its environmental cooperation with key big countries, EU and countries with traditional friendship, in particular environmental cooperation with neighboring countries.

It will expand and develop environmental cooperation with developing countries and continuously deepen its cooperation with international organizations such as UNEP, WB and GEF... The introduction of foreign capitals, technologies and management experience will help China improve the environmental protection technology and management level. Efforts will be made to facilitate the environmental protection equipment and technology entering international market. China will enhance its capacity in self innovation and actively promote international cooperation and technological transfer that reduce the emissions of greenhouse gases. China will enhance the coordination between environment and trade. It will take active measures to address green trade barrier, improve environmental standard on foreign trade products, establish an environmental risk assessment mechanism and monitoring and control system for hazardous substance in imported goods. In doing so, it will appropriately introduce useful renewable resources and species resources and strictly prevent the introduction of pollution, illegal import of waste, invasion of hazardous alien species and the loss of genetic resources.

6.4 Solid Waste Management Framework

Introduction
China has comprehensive set of policies governing solid waste management (SWM). The current policy system can be divided into three different levels, namely: Regulations, laws and documents issued by the state Administrative regulations and documents issued by related ministries of central government Local laws and regulations issued by local governments State level laws for solid waste management include Environmental Protection Law, Management Regulations on Municipal Appearance and Environmental Sanitation and The law of the P.R.C. on Prevention and Control of Solid Waste Pollution. Related ministries and commissions have formulated local regulations and rules to carry out state level laws and regulations on local level.
The law of the P.R.C. on Prevention and Control of Solid Waste Pollution issued in 1995 is the basic and most important law with regards to Solid Waste Management, which formulates basic requirements for dumping, cleaning up,

collection, transportation, recycling, treatment and disposal. The law was revised in Dec., 2004 and the new version became effective on April 1st, 2005.
In addition, some related regulations and standards have already been formulated by the State Council and the Ministry of Construction, a few examples:

- ✓ The Management Measures of Municipal Solid Waste
- ✓ MSW Segregation and Its Evaluation Standard
- ✓ The Installation Standards for Environmental and Sanitary Facilities
- ✓ Technical Standard of MSW Transfer Stations
- ✓ Technical Guidelines of Operation and Maintenance of MSW Transfer Station
- ✓ Technical Standard of MSW Landfill
- ✓ Technical Guidelines of Operation and Maintenance of Landfill Sites
- ✓ Technical Guidelines of Operation, Maintenance and Safety of MSW Composting Plants
- ✓ Technical Standard of MSW Incineration Technology

MOC has developed guidelines and requirements for management of solid waste disposal, including landfills, composting and incineration. In its guidelines, it is addressed site criteria, liner criteria and a series of guidelines on disposal techniques and management procedures.
Recognizing the need to introduce SMW tariff policies, MOF, MOC and SDPC jointly drafted the National Guidelines on Solid Waste Tariffs (NGSWT)in 1999. The guidelines were approved by the State Council in 2002. Key components of the guidelines include (i) principals for tariff settings; (ii)a set of financial, economic, environmental and social objectives to be achieved by setting tariffs; (iii)institutional and legal arrangements for tariff setting and approval. The NGSWT will provide a strong regulatory framework and a systematic basis for determining appropriate municipal waste management tariffs. However, a detailed methodology for solid waste tariff management (including tariff setting, implementation, collection and administration) has yet to be developed.
Many cities, especially developing big cities, costal cities as well as tourism cities have formulated local regulations on MSWM.
Although comprehensive solid waste management legislation is in place, the government has only recently begun genuine enforcement. Enforcement of the legislation and standards is the responsibility of the Provincial and Municipal Environmental Protection Administrations.

Segregation
MSW segregation is a very new concept in China. It was in June 2000 that MOC designated 8 big cities: Beijing, Shanghai, Nanjing, Hangzhou, Guilin, Guangzhou, Shenzhen and Xiamen to be the trial city of MSW segregation. Accordingly each trial city set own plans and targets acc. to their situation, for example Shanghai's target was to reach 20% in 2000 and 50% in 2002 in the central district, Shenzhen 60% in 2005 and 90% in 2010. Basically each trial city divides the MSW into 3 categories: organic, hazardous and recyclable. Organic is mainly food waste; hazardous is the battery and electronic product; recyclable is the paper, plastic and metal etc.
A few other big cities like Dalian, Xi'an, Qingdao and Zhengzhou have also started MSW segregation. In general, the segregation rate in the Chinese big cities is regarded to be very low. The reasons are mainly the following: The traditional

habit of mixed waste disposal is still dominating; people are not well educated of the new concept. The adequate and proper disposal facilities for segregation is lacking due to the shortage of capital. Due to the lacking of facility and transportation means in the transfer center, it has happened that the already separated waste was mixed in these centers. The inadequately trained sanitary staff could also be counted for such happenings.

On the other hand recycling is done on a large scale by the rag pickers who collect paper, plastics, cardboard, glass and metals etc. from streets, bins, dumpsites and landfills. These rag pickers make their living from their scavenging and it is said to be a profitable business. Naturally, the hygienic standard of such activity is low.

Collection and Transfer

Mix collection is still the mainstream in China's MSW. China's urban residents are provided with sufficient waste collection systems. The most common refuse collection system is central drop-of spots in each neighborhood. The collection container could be plastic or steel bin of about 0.5 m^3 5 m^3, or the brick and cement construction of 5m^3 to 10 m^3. The collection containers are not covered and due to the high food waste content and the heat, they are odorous and attract flies. The containers are emptied either daily or twice daily.

Waste is loaded by several means on to collection vehicles. Collection vehicles include a combination of handcarts, tricycles and trucks. Trucks are generally single axle either sealed compacting trucks or open dump trucks. The open dump trucks are gradually being replaced with sealed trucks. Due to the lacking of proper investment in the past, cities are facing the problem of lacking collection and transfer machinery. Greater part of the machinery currently in use is out-dated and of poor quality. Still a big part of the collection work is done manually.

Acc. to the MOC standard of Transfer Station, in the area where handcarts and tricycle are used for waste collection, a small transfer station should be built for each service distance of 0.5 km; in the area of small-sized motor vehicles being used for waste collection, the service distance for a small transfer station is 2 km; when the transportation distance is over 20 km, a medium or large transfer station should be established. The division of small, medium and large transfer stations is based on its daily disposal capacity of under 150 tons/day, 150 to 450 tons/day and over 450 tons. In some big cities like Beijing, Shanghai, Guangzhou and Shenzhen, compacting equipment is used in their transfer stations.

The common practice of the big cities in recent years is to build regional small stations of under 50 tons/day capacity. The large-scale transfer station is in the planning stage in most of the big cities except a few cities like Beijing, Shanghai, Tianjin and Xiamen where big and modern transfer stations are in full operation. The first big enclosed transfer station was built in Beijing in 1993 with capacity of 1500 tons/day. There are 4 big transfer stations in Beijing, besides compacting equipment, some of them are facilitated with screening equipment.

The Role of Recycling

China's current recycling rates are lower than most other countries and likely much lower than intuitively believed. The secondary materials market in China is affected by several factors, including: value to the recycler (for example a domestic pulp mill), avoided disposal costs and price paid in the exporting country (this is the main driver for the high levels of imported waste in China), avoided disposal costs and price paid to domestic producers (this impacts domestic waste pickers—this factor is minimized by the relatively low tipping fees in most Chinese cities), cost of domestic and international transportation (It may now be cheaper to transport secondary materials by ship to Chinese port Cities than it is to transport domestic materials by truck or rail to the same facilities), and cost of enacting environmental safeguards associated with recycling the material (this is the largest driver for the importation of e-waste in China—environmental costs in the U.S. are prohibitive, while in China minimal environmental safeguards are enacted).
Much of China's current recycling system is being adversely affected by the import of low-cost secondary materials from high-income countries that are exporting these materials to avoid using their limited landfill capacity and paying their higher costs of disposal (largely due to more stringent environmental regulatory requirements). In 2002 the US exported an estimated $1.2 billion in scrap and secondary materials to China – up from $194 million five years earlier.17 The Hangzhou Jinnjiang Paper Company in Linan, for example, imported up to 90% of its feedstock paper from the U.S. (at a cost of $95 per tonne FOB Newark, N.J. in 2003).18 Electronic waste provides another example of how China is being affected by global markets for recycled materials (see Annex 12). In the U.S. alone more than 40 million computers became obsolete in 2001; and as much as 80 percentof these were exported, mostly to China, at about a tenth of the price of recycling or disposal in the U.S.19 Using recycled feedstock, rather than virgin resources, provides large environmental benefits. In recycling aluminum for example 95% of the energy needs can be reduced. Paper produced from recycled secondary fibers saves energy and reduces overall pollution, especially organic loadings. China's pulp and paper production from raw materials accounts for about 47% of the country's total chemical oxygen demand (COD) discharges. Paper, due to its large and growing portion of China's waste stream and its relative high recyclability, is the priority commodity for planners of recycling programs to address. If China were to set a modest target of 50% recycling of waste paper by 2030, over 38 million tones of waste paper could be diverted from disposal (see Figure 2.1). Another priority is scrap metal recycling. China's scrap metal generation will continue to grow rapidly; especially as larger waste items such as scrap cars are disposed.

Changes to Waste Collection Practices, residential waste collection in Chinese cities are undergoing rapid change. Already, many cities have had to retrofit neighborhood transfer stations25 to enable both horizontal and vertical waste compaction (illustrating the increase in packaging materials, plastics and paper). As waste volumes continue to increase, these facilities will likely become inadequate. Many of these facilities are located in prime commercial locations and space for expansion is not available. Strategic planning of new transfer sites is important to the future cost-optimization of city solid waste systems. Larger "central transfer stations"26 will become increasingly important in China. Most cities over 1,000,000 will need to build these facilities over the next 5 to 10 years

as they respond to growing waste volumes. Land use plans will need to accommodate these requirements. Chinese cities, with their high population densities and relatively large sizes, require customized and highly efficient residential and especially ICI waste collection programs. Residential waste collection is now sporadic in many cities. Some areas are getting waste collection up to three times per day, while other areas receive no regular waste collection. People will likely need to accept changes in their waste collection practices; some examples could include twice per week collection, placing organic-recyclable-waste out for collection in separate containers. ICI waste generators will likely need to develop better storage of waste on-site (again in separate containers) and pay collection and tipping fees based on waste volumes. The most important change to waste collection in China will be increased waste segregation. Although waste segregation entails slightly higher collection costs and requires compliance from waste generators, it is a critical component of an integrated waste management strategy since it is a prerequisite for new and innovative waste management programs. Waste segregation significantly increases waste diversion potential (non-contaminated dry waste is more easily recycled), increases quality of produced compost and recyclables, and optimizes incineration. Waste segregation also increases awareness of waste management issues and is usually accompanied with reductions in waste generation (or reductions in the rate of growth). Waste segregation is also important to enable better financing of waste management activities. By segregating the waste stream and optimizing collection and disposal options costs can be better allocated and financing more easily obtained, e.g. more likely to have guaranteed revenue streams.

6.5 Water Environment Protection Legislation in China

Water environment protection is always the most important field of environment protection work. China has enacted and promulgated quite some special laws and regulations on the protection of water environment as well as on the related natural resources. The Standing Committee of the National People's Congress (NPC) has approved the Law of the People's Republic of China on Prevention and Control of Water Pollution (PRC WPPC Law) in 1984 and revised it in 1996, approved the Water Law of PRC in 1998 and revised it in2002, and approved the Law of PRC on Water and Soil Conservation in 1991.
Chinese government has enacted some administrative decrees regarding water environment protection, including Interim Regulations on the Prevention of Water Pollution in the Huai River Valley (Order of the State Council of PRC, No. 183, Promulgated in 1995), Implementation Rules for the PRC WPPC Law (Order of the State Council of PRC, No. 284, Promulgated in 1989 and revised in 2000), Regulations on the Administration and Use of Pollution Discharge Fee (Order of the State Council of PRC, No. 369, Promulgated in 2003), etc.

The concerned ministries and departments of Chinese government have issued a number of administrative rules on water environmental protection, which include Interim Measures on the Administration of Key Water Pollutants Discharge Permit in Huai River Basin and TaiLake Basin (Issued by State Environmental Protection Administration of China (SEPA of China) in 2001), Interim Measures on the Administration of Water Pollutants Discharge Permit (Issued by SEPA of China in 1988), Provisions for the Administration of the Prevention and Control

of Pollution in Protected Areas for Drinking Water Sources (Issued by SEPA of China, Ministry of Water Resources, Ministry of Construction, etc. in 1989), Measures on the Supervision of Sewage Treatment Facilities for Environmental Protection (Issued by SEPA of China in 1988) , Measures on the Administration and Use of Pollution Discharge Fee (Issued by Ministry of Finance and SEPA of China in 2003), etc. What is more, some technologies and policies about lake eurtophication prevention, urban sewage treatment and pollution prevention, industrial wastewater treatment, etc. were issued. Environment Standards, which are an important component of China's environment statutory framework, include environment quality standards, pollutant discharge or emission standards, basic environmental criteria, criteria for samples, and criteria for methodology. As stipulated in Chinese law, the environment quality standards and pollutant discharge standards are compulsory standards, and those who violate these compulsory environment standards must bear the corresponding legal responsibility. The water environment quality standards of China include Environmental Quality Standards for Surface Water (GB 3838-2002), Sea Water Quality Standard (GB 3097-1997), Quality Standard for Ground Water (GB/T 14848-93), and Standard for Irrigation Water Quality (GB 5084-92), etc. The water pollutant discharge standards include Integrated Wastewater Discharge Standard (GB 8978-1996), Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant (GB 18918-2002), and the discharge standards for the paper-making, chemical, brewery and other industries. A series of criteria for water environment monitoring and methodology were also issued. To implement the state's water environmental protection laws, regulations and standards, people's congresses and people's governments at local levels, according to the specific conditions in their own areas, have established and promulgated a series of regulations and standards on water environmental protection. Up to now, the water environment protection statutory framework, which is based on the PRC WPPC Law, is basically established, and a series of effective water environment protection policies as total pollutant discharge control, environment impact assessment, information publication and public participation have been setup, which have played an important role in the water environment security in China.

6.6 E-Waster control

China's RoHS regulation of electrical and electronic products is based on the Law on the Promotion of Clean Production, which was adopted on June 29, 2002 and became effective on January 1, 2003.The State Environmental Protection Administration (SEPA) is undertaking extensive efforts to develop pollution control standards for the electronics industry. Current pollution control standards in the pipeline for the industry separately address:

- ✓ Semiconductor manufacturing;
- ✓ Component manufacturing (other than ICs);
- ✓ Vacuum tube manufacturing (essentially, relevant CRTs/displays);
- ✓ Electronic framework and component products (i.e., boards); and Electronic end-product assembly.

SEPA is also working on, in conjunction with these standards, Technical Provisions on Disposing of and Discarding Waste, Used and Defective

Electronic Products. These standards set forth the maximum discharge concentrations for major water and air pollutants, as well as testing methods for determination of these pollutants. The drafts of most of the 6 standards included in the project have been completed. Currently, SEPA officials are reviewing these draft standards and will decide next steps of standard making processes.

Eleven categories of electronic information products are listed but the term is not legally defined. To summarize the products that is covered:
Electronic materials - single crystals, sheet materials, encapsulation materials, photo masks & quarts products for semiconductors; insulating paper, laminates, optical glass, powders, foils, films & piezoelectric materials for electronic elements; tungsten, molybdenum, nickel, glass, liquid crystal, alloy & contact materials for vacuum devices; chemical materials such as fluorescence powders, carbonate, getter & photo resist

Electronic components - PCBs, memory, sound, video & network cards, integrated circuits, CPUs & DSPs; capacitors, resistors & potentiometers, connectors & switches, relays, sensors, magnetic cores, inductors, transformers, power supplies & jacks; tuners, magnetic head, optical head, antennas, microphones, speakers, sound box, earphones, pick-ups & buzzers; electron & electron beam tubes, photoelectric devices, semiconductor diodes & triodes, thyristors & transistors; fluorescent, halogen & sodium vapor light bulbs; motors for audio recorders & players, video players, vibrating pagers & phones, washing machines, fans & compressors; electronic wire & cable, fiber optic cable; alkaline, lithium, reserve & solar batteries, chargers & accessories; (electronic components in autos are covered)
Consumer products - telephones, cell phones, pagers, fax machines; computers, monitors, laptops, handhelds, calculators, printers & ink cartridges, digital cameras, memory storage & networking devices; televisions & radios; video or audio players, recorders & media; electronic keyboards, game players, microwave ovens, electromagnetism stoves, and "other" household electrical & electronic products (whatever that means)
Commercial & medical equipment - communications & navigation equipment for ships, aircraft & satellites; radar, radio, television, telegraph, telephone, microwave, cellular & fiber optic equipment such as transmitters, receivers, antennas, switches & terminals; audiovisual recording, mixing & playback devices; industrial computers & computer networks; electronic publishing equipment; banking machines & ATMs; medical monitoring, diagnostic & therapeutic equipment including EKG, ultrasound, laser, biochemical, high frequency, microwave, radiation, nuclear, optical & anesthesia; meteorological instruments; meters for phones, taxis & gasoline sales
Manufacturing & test equipment - all equipment used in producing and assembling semiconductors, tubes, vacuums & electronic components including polishing, exposure & developing, diffusion, plating, packaging, wave-soldering, precision welding, drying, machining, mold & die carrier; pneumatic, electric & soldering tools; all equipment for measuring frequency, time, voltage, pulse, spectrum & interference for microwave, radio, broadcast & power; power supplies, signal generators & oscillators; network testing devices. Packaging materials for electronic information products (not listed in Classification, but included per Article 14)

The scope of China RoHS is quite different than the European RoHS. Some things, such as commercial & medical equipment, manufacturing & test equipment, and packaging materials are covered by China RoHS but not by EU RoHS. To date, China RoHS is silent on vending machines.

Household electrical and electronic products constitute the most ambiguous area of coverage. During a question and answer session in May 2006, the MII indicated that "black household appliances" such as TVs, radios, video players and stereo systems are considered electronic information products, but "white household appliances" such as refrigerators, washing machines and air conditioners are not. Electronic components used in automobiles and household appliances constitute another ambiguous area. The Ministry of intelligence and information indicated that electronic components sold business to customer are considered electronic information products, but electronic components sold business to business for use by a "whole set" manufacturer are not.
Six toxic or harmful substances should be "reduced or eliminated" in electronic information products: lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls and polybrominated diphenyl ethers . These are the same six hazardous substances prohibited by EU RoHS. And like the EU, China reserves the right to add other substances to the list as scientific evidence becomes available.
Unlike EU RoHS, China RoHS does not officially provide exemptions in situations where the elimination of hazardous substances is technically or scientifically impracticable or would produce negative environmental, health or safety impacts. However, the phase-in period for China RoHS provides such exemptions in practice.
Manufacturers and importers must determine the environment-friendly use period of products that contain toxic or harmful substances. This is the period during which the product may be safely used without leaking or mutation of the hazardous substances.

6.7 Energy Efficiency

General the most important energy efficiency programs in China currently include energy efficiency labeling, certification, and energy efficiency standards. Chinese government law and policymakers have indicated that resource conservation, in which energy efficiency plays a prominent role, should be a national priority in 2008 and beyond.
A comprehensive energy statute, the Energy Law, has been put on the legislative agenda of the National People's Congress and the first draft has been completed and circulated for public comment in 2008.

Energy Efficiency – Standards China has developed about several dozen of energy efficiency standards for certain products such as air conditioners, washing machines, and some lighting products. Manufacturers and importers must meet these mandatory standards for their products.
New energy efficiency standard development activities are underway which will cover other products, including IT products.

Energy Efficiency – Labeling .The energy efficiency labeling program initially covers air conditioners, refrigerators and washing machines.
It is likely the next batch of covered products will include other household appliance and lighting equipment.Manufacturers and importers are required to label their products with specified energy efficiency levels, which are differentiated by color and to make self-determinations of their products' energy efficiency levels.

6.8 Circular Economy Promotion Law

The National People's Congress (NPC), China's highest-level legislative authority, added the "Circular Economy Promotion Law" to the NPC legislative agenda for 2007.This is an example of legislative developments influenced by, among other issues, China's resource depletion concerns.
The NPC Environmental Protection and Resource Conservation Committee is the lead for drafting of this statute. The NPC congresspersons and staff involved in the drafting process opine that additional recycling, reuse and resource conservation/energy efficiency programs in China may be legitimized under such a statutory regime, potentially affecting a wide range of electronic and electrical products and related commercial operations.
The NPC Standing Committee has reviewed the law in August 2007 for the first reading and hope to conduct the second reading in February 2008.
The Standing Committee of the 11th National People's Congress (NPC) passed the Circular Economy Law after the second reading. It will come into force on January 1, 2009
The law requires the government to closely monitor energy consumption and pollution emissions in heavy consuming and polluting industries including the steel and non-ferrous metal production, power generation, oil refining, construction, and printing industries; government departments to promote recycling and improve energy-saving and waste-reutilization standards and develop policies to divert capital into environment friendly industries; industrial enterprises to introduce water-saving technologies, strengthen management, and install water-saving equipment in new buildings and projects; crude oil refining, power generation, steel and iron production plants to stop using oil-fired fuel generators and boilers, in favor of clean energy, such as natural gas and alternative fuels; enterprises and government departments to adopt renewable products in new buildings, such as solar and geothermal energies; enterprises to recycle and make comprehensive use of coal mine waste, coal ash, and other waste materials; and encourages farmers and rural administrators to recycle straw, livestock waste, and farming by-products to produce methane.
The central government will allocate funds and capital to enterprises to ncourage innovation in recycling technologies, and provide tax breaks to enterprises introducing and using energy-efficient technologies and equipment.

6.9 Environmental Standards highlighted

As mentioned in this report China will speed up the amendment and improvement of existing laws, regulations and standards and fill the law gap. Environmental rule-making and enforcement has reached a level that has never been seen in the history of China in 2008. Regulatory community has observed

much more frequent and intense environmental rule-making efforts. Many regulations and standards have been putted into effect every month in 2008.

Such rule-making efforts often involve multiple agencies and multiple levels of governments. At least in some jurisdictions of China, the situation of "weak enforcement" is being changed in at least some areas of environmental laws.

The national-local government relationship in the environmental area has also become somehow sensitive. The Songhua River benzene spill triggered serious concerns of senior government decision-makers on issues involving the national-local relationship.

Officials at the local level face pressures involving increasing intervention by national government inspectors. Officials at the national level are still facing the not- yet-eased local protectionism.

Environmental Regulations and Standards Putting into Effect as of February 1, 2008

Regulations issued by State Environmental Protection Administration (SEPA)	
Administrative Measures on Prevention and Control of E-waste Pollution (SEPA Order No. 40)	Electronic wastes refer to abandoned electronic products, electric equipment and their components as well as articles and substances that are subject to e-waste management as required by SEPA and other departments concerned. They also include waste products or equipment arising from industrial production, scrap semi finished articles and rejects, other waste products generated from maintenance, renovating and reproduction of products or equipment, any abandoned products or equipment from daily life or related service activities and those prohibited from production and import by law and regulations. This regulation is applicable to People's Republic of China for the prevention and control of pollution arising from disassembling, utilizing and disposing of electronic wastes. It is also applicable to pollution control from e-wastes generation and storage. For related laws and regulations that provide otherwise, those laws and regulations shall prevail. Prevention and control of environmental pollution caused by activities relating to electronic hazardous wastes are subject to provisions on hazardous wastes management of the Law of People's Republic of China on Prevention and Control of Pollution by Solid Wastes.
National Standard for Environmental Protection	
Technical requirement for environmental protection product - Supersonic flowmeters of wastewater (HJ/T15-2007)	This standard specifies technical requirement for supersonic flowmeter for open channel wastewater, testing items, methods, rules and requirements for packaging, transport and storage. This standard applies to ultrasonic open channel flowmeters for the measurement of outflow of open channels and flow of all kinds of waste water that is not carried in pipes.

Technical requirement for environmental protection product - Ultrasonic pipe flowmeters (HJ/T366-2007)	This standard specifies classification and naming of ultrasonic pipe flowmeters, their technical requirements, testing methods, rules and requirements on labeling, packaging, transport and storage. This standard is applicable to ultrasonic pipe flowmeters for measuring the flow of pressurized pipe liquid.
Technical requirement for environmental protection product - Electromagnetic pipe flowmeters (HJ/T367-2007)	This standard specifies technical requirements on electromagnetic pipe flowmeters, testing methods and rules and requirements on labeling, packaging, transport and storage. This standard applies to electromagnetic flow transmitters or flowmeters combining sensors and transmitters that are used to measure non-compressible water and wastewater in closed pipes.
Technical requirement and test procedures for special orifice flowmeter for total suspended particulate sampler calibration (HJ/T368-2007)	This standard specifies technical requirements and determination methods for special orifice flowmeter for total suspended particulate sampler calibration. This standard is applicable to orifice flowmeters that cater for the need of big volume and middle volume.
Technical requirement for environmental protection product - Chemical feed equipment for water treatment (HJ/T369-2007)	This standard specifies classification and naming of chemical feed equipment for water treatment, technical requirements, testing methods and requirements on labeling, packaging, transport and storage. This standard is applicable to equipment adding powder and liquid chemical to water supply, circulating water and sewage treatment.
Technical requirement for environmental labeling products - Offset printing ink (HJ/T 370-2007)	This standard specifies the terminology and definition of environmental labeling product of offset printing ink, basic requirement, technical content and testing methods. This standard applies to offset printing ink except radiation curing printing ink.
Technical requirement for environmental labeling products - Gravure and flexible printing ink (HJ/T 371 -2007)	The standard specifies the terminology and definition of environmental labeling products of gravure and flexible printing ink, the basic requirements, technical content and testing methods. This standard applies to solvent-based gravure printing ink, solvent-based flexible printing ink, water-based gravure printing ink, water-based flexible printing ink and solvent for the use of gravure and flexible printing ink.
Technical Specifications for Urban Fugitive Dust	This standard specifies the basic principles and measures to prevent and control pollution caused by various urban flying dust, sampling method and limit for road dust loading.

Pollution Prevention and Control (HJ/T393-2007)	The standard is applicable to prevention and control of flying dust pollution from all kinds of construction sites in urban districts, laid and unlaid road surface, squares and parking lots, various open dumping sites, freight yards, mining and quarry, bare soil ground in cities and activities concerned with material mix, loading and unloading, delivery and transport.
Technical Guidelines for Environmental Protection in Ecological Construction Projects for Check & Accept Completed Project (HJ/T 394-2007)	This standard provides the overall requirements for check and acceptance investigation and requirements for preparation of implementation scheme investigation report of completed construction projects that have an impact on ecological system. This standard applies to construction projects that have an impact on eco system such as transportation (highway, railway, urban road and metro transport, port and shipping and pipeline transport, etc.), water conservancy and hydropower, exploration of oil and gas, mining, power generation (wind energy), agriculture, forestry, husbandry, fishing, tourism, development of oceanic resources and coast belt, high voltage power supply and transmission and check and acceptance investigation of completed construction projects for regional and river basin development. Other projects with environmental concerns can be evaluated pursuant to this standard.
Environmental information terminology (HJ/T 416-2007)	The standard provides terminologies and definitions that are often used in environmental information system building and day-to-day work. The standard applies to environmental information system building and development and utilization of environmental information resources by environmental protection bureaus at all levels.
Environmental information classification and code (HJ/T 417-2007)	This standard provides classification and code of information on environmental management, environmental science, environmental technology, environmental industry and other related information. It only provides basic framework and code on environmental information classification. The standard applies to environmental information collection, exchange, processing, use and building of environmental information system for environmental protection bureaus at all levels.
Specification for environmental information system integration (HJ/T 418-2007)	The standard specifies technical requirements on environmental information system integration including application integration, data integration and network integration. This standard applies to integration of environmental information system and its users include technicians for the plan and design of environmental information system.
Specification for environmental	This standard specifies basic principles for the design, operation and management of environmental database.

database design, operation and management (HJ/T 419-2007)	This standard is applicable to guide competent environmental departments at national, provincial and municipal level and related institutes for the design, operation and management of relational environmental database system. It can serve as reference for environmental protection departments at all levels to check and accept database system designed and developed by related institutes.
The following standard shall be void upon when the above standards are put into effect.	
Supersonic flowmeters of waste water (HJ/T15-1996)	
Ultrasonic pipe flowmeters (HCRJ057-1999)	
Electromagnetic pipe flowmeters (HBC34-2004)	
Technical requirement for special orifice flowmeter for total suspended particulate sampler calibration (HBC4-2001)	
Chemical feed equipment for water treatment (HCRJ068-1999)	

Environmental Regulations and Standards Putting into Effect as of March 1, 2008

National environmental regulations	
Administrative measures for the approval of exporting hazardous wastes (Decree No. 47, SEPA)	Organizations generating, collecting, storing, disposing of and using hazardous wastes must obtain approval of export before such wastes are exported to Parties to Basel Convention outside the territory of PR. China. Hazardous wastes as referred to herein include solid wastes listed in National Catalogue of Hazardous Wastes and those deemed to be dangerous according to national standards and methods for identification of hazardous wastes. Hazardous wastes and other wastes provided by Basel Convention as well as hazardous wastes identified in related laws of signatory Parties for import or transit are also subject to the administrative measures.
National standard for environmental protection	
Technical requirements and test procedures for total suspended particulates sampler (HJ/T 374-2007)	Technical requirements and testing methods for total suspended particulates sampler are provided in the standard. The standard applies to large flow and medium flow TSP samplers.
Technical requirement and test procedures for ambient air sampler (HJ/T 375-2007)	Technical requirements, testing items and procedures for ambient air sampler are provided in the standard. The standard applies to samplers suited to ambient air sampling.

Technical requirement and test procedures for 24h thermostatic automatic continuous ambient air sampler（HJ/T 376-2007）	Major technical requirements and testing procedures of 24h thermostatic ambient air samplers which can make automatic continuous testing of SO2, NOx and other harmful substances are provided in the standard. The standard applies to 24h thermostatic ambient air samplers that can have automatic and constant testing of SO2, NOx and other harmful substances.
Technical requirement for environmental protection product Water quality on-line automatic monitor of Chemical Oxygen Demand（CODCr）（HJ/T 377-2007）	The standard provides technical requirements and testing methods for automatic on-line monitors of COD in surface water and sewage discharged by enterprises and institutions. The standard applies to automatic on-line monitors of COD in surface water and sewage for their production, type application and performance testing.
Technical requirement and test procedures for operation recorder of pollution treatment facility（HJ/T 378-2007）	The standard provides technical requirements, testing procedures, testing rules, labeling, packaging, transport and storage of operation recorders of pollution treatment facilities. The standard applies to automatic monitors and recorders for the operation of various electric pollution control facilities.
Technical requirement for environmental protection product Sound-proof door（HJ/T 379-2007）	Technical requirements, testing procedures and rules of sound-proof doors are provided in the standard. The standard applies to sound-proof doors made of composite material such as steel, wood and iron for the purpose of construction and noise control. The standard can be applied to sound-proof doors made of other materials for construction and noise control as well.
Technical requirement for environmental protection product Rubber vibration isolator（HJ/T 380-2007）	The standard provides the definition, classification and naming, requirement, testing procedures, testing rules, labeling, packaging, transport and storage of rubber vibration isolators. The standard applies to general rubber vibration isolators used to buffer vibration of machinery.
Technical requirement for environmental protection product	The standard provides the definition, classification and naming, requirement, testing procedures, testing rules, labeling, packaging, transport and storage of spring vibration isolator with damping.

Spring vibration isolator with damping (HJ/T 381-2007)	The standard applies to spring vibration isolator with damping.
Technical requirement for environmental protection product Micropore muffler of high pressure gas blow-off (HJ/T 382-2007)	The standard provides the definition, classification, requirement, testing procedures, testing rules, labeling, packaging, transport and storage of micropore muffler of high pressure gas blow-off. The standard applies to micropore muffler of high pressure gas blow-off used for noise reduction in various pressure containers and safety valves.
Technical requirement for environmental protection product Exhaust muffler of automobile engine (HJ/T 383-2007)	The standard provides the definition, classification, requirements, testing procedures, testing rules, labeling, packaging, transport and storage of exhaust muffler of automobile engines. The standard applies to exhaust muffler of auto engines under category M and N.
Technical requirement for environmental protection product General low noise axle-flow flower (HJ/T 384-2007)	Technical requirements, testing procedures and rules for general low noise axle-flow flower are provided in the standard. The standard applies to single-stage axle-flow flowers used for ventilation, air conditioner and production sites which rely on air and other mixed gas exclusive of erosive substance as transmission media. The flowers' maximum flux is under 75000m3/h, or under the pressure of 490Pa. The standard does not apply to axle-flow flowers used for preventing explosion and erosion, under high temperature, mines or other special purposes.
Technical requirement for environmental protection product Low noise type cooling tower (HJ/T 385-2007)	Technical requirements, testing procedures, rules, packaging and transport of low noise cooling tower are provided in the standard. The standard applies to mechanical draft low noise cooling tower with single tower capacity less than 500m3/h.
Technical requirement for environmental	Technical requirements, testing methods and rules for adsorption gas cleaner for industrial emission are provided in the standard.

protection product Adsorption gas cleaner for industrial emission (HJ/T 386-2007)	The standard applies to adsorption gas cleaner for industrial emission used for removing gaseous or aerosol pollutants with a treatment capacity of 50-20000m3/h.
Technical requirement for environmental protection product Absorption gas cleaner for industrial emission (HJ/T 387-2007)	Technical requirements, testing methods and rules for absorption gas cleaner for industrial emission are provided in the standard. The standard applies to absorption gas cleaner for industrial emission used for removing gaseous or aerosol pollutants with a treatment capacity of 150m3/h-20000m3/h.
Technical requirement for environmental protection product Wet paint-mist filtrating equipment (HJ/T 388-2007)	The standard provides technical requirements, testing method and rules for spray, water curtain, pumpless water excited and water curtain wet paint-mist filtrating equipment. The standard applies to wet paint-mist filtrating equipment used in coating operations for paint spraying on small and medium parts and large blast spray booth.
Technical requirement for environmental protection product Catalytic gas cleaner for industrial organic emission (HJ/T 389-2007)	The standard provides technical requirements, testing method and rules for catalytic gas cleaner for industrial organic emission. The standard applies to catalytic gas cleaner for industrial organic emission used for removing gaseous or aerosol organic pollutants with a treatment capacity of 50m3/h-20000m3/h.
Technical requirement for environmental protection product Control system of fuel evaporative pollutants from vehicle with petrol engine (HJ/T 390-2007)	The standard provides the definition, technical requirements, testing method, checkout rules, labeling, packaging, transport and storage of control system of fuel evaporative pollutants from petrol engines. The standard applies to control system of fuel evaporative pollutants from petrol engines.
Technical requirement for environmental protection product	The standard provides the definition, classification and naming, requirements, testing method, checkout rules, labeling, packaging, transport and storage of flexible rubber pipe joints.

Flexible rubber pipe joint (HJ/T 391-2007)	The standard applies to such flexible rubber pipe joints as used for reducing transmission of pipe vibration and compensating displacement.
Technical requirement for environmental protection product Catalytic converter for motorcycles (HJ/T 392-2007)	The standard provides the classification and naming, technical requirements, testing method, checkout rules, labeling, packaging and storage of catalytic converters for motorcycles. The standard applies to catalytic converters for various unleaded motorcycles, lightweight motorcycles and fuel mopeds that are catalyzed by metal or cellular porcelain.
Equipment Specifications and Quality Control Requirements for In-use Vehicles Equipped with Compression Ignition Engine in Free Accelerating Smoke Test (HJ/T 395-2007)	The standard provides specifications, technical requirements for functions and performance and testing method of opacity smokemeters. For facilities equipped with computer control system, basic requirements are set out for the smoke test software. The standard also provides requirements for test items and methods for test stations to conduct routine check of equipment, on-site installation equipment and type approval equipment.
Equipment Specifications and Quality Control Requirements for In-use Vehicles with Ignition Engine Exhaust Emission Test in Transient Loaded Mode (HJ/T 396-2007)	The standard provides specifications, technical requirements for functions and performance of major equipment for testing exhaust emission of in-use vehicle with ignition engine in transient loaded mode including chassis dynamometer, exhaust analyzer, flowmeter and sampling system. It also specifies basic requirements on the functions of control software, on testing items and methods for test stations to conduct routine check on equipment, on-site installation equipment and type approval equipment. The standard applies to manufacture and use of exhaust emission testing equipment for in-use vehicle with ignition engine in transit loaded mode and to type approval test.

Technical specifications for emission monitoring of stationary source（HJ/T 397-2007）	The standard provides technical requirements for manual sampling and testing of particulates and gaseous pollutants from emissions of stationary sources like flues, stacks and exhaust shaft. Monitoring methods of portable instruments are also provided. There are provisions on preparation of emission monitoring of stationary sources, determination of emission parameters, sampling and testing of particulates and gaseous pollutants and quality assurance of monitoring. The standard applies to monitoring emissions from stationary sources conducted by environmental monitoring centers at all levels, professional environmental monitoring institutions in industrial and business sectors and environmental science departments, environmental monitoring of construction projects for acceptance, monitoring effects of pollution control facilities, validating monitoring system of constant emissions and studying cleaner production techniques and pollution control technologies.
Stationary source emission- Determination of blackness of smoke plumes-Ringelmann smoke chart（HJ/T 398-2007）	The standard provides Ringelmann smoke chart for testing blackness of smoke plume including position and conditions for observation, observation method, calculation method and specifications of standard Ringelmann smoke chart. The standard applies to monitoring the blackness of grey or black smoke discharged from stationary sources at the outlet. It does not apply to monitoring of smoke of other colors.
Water quality - Determination of the chemical oxygen demand - Fast digestion- Spectrophotometric method（HJ/T 399-2007）	The standard applies to the determination f COD in surface water, groundwater, domestic sewage and industrial wastewater.
Determination of Volatile Organic Compounds and Carbonyl Compounds in Cabin of Vehicles（HJ/T 400-2007）	The standard provides technical requirements of setting up sampling sites and sampling conditions for monitoring volatile organic compounds and carbonyl compounds in cabins, sampling methods and equipment, related testing measures and equipment, data processing and quality assurance. The standard applies to sampling and testing volatile organic compounds and carbonyl compounds in vehicle cabins when vehicles are static.
Cleaner production standard- Tobacco	The standard provides general requirements on tobacco industry for clean production of cigarettes.

industry (HJ/T 401-2007)	The standard applies to tobacco industry for the review of clean production of cigarette manufacturers, assessment of potentials and opportunities for clean production, performance evaluation of clean production and related reporting system. It can also be used for environmental management systems such as environmental impact assessment and management of pollution discharge permit.
Cleaner production standard-liquor industry (HJ/T 402-2007)	The standard provides general requirements on distilled spirit industry for clean production. The standard applies to distilled spirit industry for review of clean production, assessment of potentials and opportunities for clean production, performance evaluation of clean production and related reporting system. It can also be used for environmental management systems such as environmental impact assessment and management of pollution discharge permit.
The following standards will be annulled upon the implementation of above standards.	
Technical requirements on total suspended particulates sampler (HBC 3-2001)	
Technical requirement for ambient air sampler (HBC 2-2001)	
Technical requirement for 24h thermostatic automatic continuous ambient air sampler (HBC 5-2001)	
Water quality on-line automatic monitor of Chemical Oxygen Demand (CODCr) (HBC 6-2001)	
Technical requirement for operation recorder of pollution treatment facility (HCRJ 039-1998)	
Soundproof doors (HCRJ 019-1998)	
Rubber vibration isolator (HCRJ 071-1999)	
Spring vibration isolator with damping (HCRJ 069-1999)	
Micropore muffler of high pressure gas blow-off (HCRJ 073-1999)	
Exhaust muffler of automobile engine (HCRJ 072-1999)	
General low noise axle-flow flower (HCRJ 020-1998)	
Low noise type cooling tower (HCRJ 018-1998)	
Adsorption gas cleaner for industrial emission (HCRJ 037-1998)	
Absorption gas cleaner for industrial emission (HCRJ 036-1998)	
Wet paint-mist filtrating equipment (HCRJ 017-1998)	
Catalytic gas cleaner for industrial organic emission (HCRJ 038-1998)	

Technical requirement for certification of environmental protection product Control system of fuel evaporative pollutants from vehicle with petrol engine (HBC 32-2004)
Flexible rubber pipe joint (HCRJ 070-1999)
Catalytic converter for motorcycles (HCRJ 046-1999)

Environmental standards putting into effect as of April. 1, 2008

National environmental standard	
Technical guidelines for Environmental Protection in Urban Rail Transit for Check and Acceptance of Completed Construction project (HJ/T 403-2007)	The standard provides general technical specifications on urban rail transit for check and acceptance of completed construction projects. The standard applies to check and acceptance of completed urban rail transit projects that are newly built, rebuilt, expanded or have gone through technological reform. This standard can also be applied to environmental impact assessment of other projects related to urban rail transit project, design of environmental facilities and routine supervision and management of completed construction projects.
Technical guidelines for Environmental Protection In Black Metal Smelting and Expansion for Check and Accept of Completed Construction Project (HJ/T 404 -2007)	The standard provides general technical requirements on check and acceptance of completed construction projects for smelting and pressing of black metal. The standard applies to check and acceptance of completed construction projects of newly built, rebuilt, expanded facilities and those undergone technology reform for black metal smelting and pressing and to routine supervision and management of completed projects. The standard can also be applied to check and acceptance of other completed ferroalloy projects relevant to black metal smelting and pressing.
Technical Guidelines for Environmental Protection In Petroleum Refinery industry project for Check and Acceptance of Completed Construction Project (HJ/T 405-2007)	The standard provides principles for determining scope of technical work and choice of implementation standard for check and acceptance of completed oil refinery projects; major elements for analyzing projects, pollution control and pollutant discharge; technical requirements on procedures of setting up monitoring sites, sampling and analysis for checkup, quality assurance and control and result evaluation, main items for checkup and investigation and requirements on technical scheme for check and acceptance and report preparation. The standard applies to check and acceptance of completed projects of newly built, rebuilt, expanded oil refinery facilities and projects undergone technical reform. This standard can also be applied to environmental impact assessment of construction projects of oil refinery industry, their preliminary design and routine environmental monitoring of completed projects.

Technical Guidelines for Environmental Protection in Ethylene project for Check and Acceptance of Completed Construction Project (HJ/T 406 -2007)	The standard provides principles for determining scope of technical work and choice of implementation standard for check and acceptance of completed ethylene projects; major elements for analyzing projects, pollution control and pollutant discharge; technical requirements on procedures of setting up monitoring sites, sampling and analysis for checkup, quality assurance and control and result evaluation, main items for checkup and investigation and requirements on technical scheme for check and acceptance and report preparation. The standard applies to check and acceptance of completed projects of newly built, rebuilt, expanded ethylene projects and those undergone technical reform. This standard can also be applied to environmental impact assessment of related projects, their preliminary design (on environmental protection) and routine environmental monitoring of completed projects.
Technical Guidelines for Environmental Protection in Automobile Manufacturing for Check and Acceptance of Completed Project (HJ/T 407 -2007)	The standard provides principles for determining scope of technical work and choice of standard for implementation for check and acceptance of completed automobile manufacturing projects; major elements for analyzing projects, pollution control and pollutant discharge; technical requirements on procedures of setting up monitoring sites, sampling and analysis for checkup, quality assurance and control and result evaluation, main items for checkup and investigation and requirements on technical scheme for check and acceptance and report preparation. The standard applies to check and acceptance of completed projects of newly built, rebuilt and expanded automobile manufacturing projects. This standard can also be applied to other projects of machinery manufacturing industry.
Technical Guidelines for Environmental Protection in Paper Industry Project for Check and Acceptance of Completed Project (HJ/T 408 -2007)	The standard provides principles for determining scope of technical work and choice of standard for implementation for check and acceptance of completed projects of paper industry; major elements for analyzing projects, pollution control and pollutant discharge; technical requirements on procedures of setting up monitoring sites, sampling and analysis for checkup, quality assurance and control and result evaluation, main items for checkup and investigation and requirements on technical scheme for check and acceptance and report preparation. The standard applies to check and acceptance of completed projects of newly built, rebuilt and expanded projects of pulp making enterprises, paper making enterprises and those integrating pulp making and paper making (excluding construction of forest bases for forest-paper integration) and to projects undergone technology reform.
Guide for Construction and	The standard provides general principles, methods, content and requirements for preparing plans of national eco-industrial parks.

Planning of Eco-industrial Parks (HJ/T 409-2007)	The standard is applicable to guide the preparation of plans for national eco-industrial parks. It can also be applied to planning of provincial and other eco-industrial parks.
Technical Requirement for environmental labeling products Copy paper (HJ/T 410-2007)	The standard provides basic requirements, technical content and testing procedures for environmental labeling products of copy paper. The standard applies to copy paper used in such office equipment as copying machine, printer, electrograph and multi function centers. The standard provides guidance only and is applicable to certification of China environmental labeling products.
Technical Requirement for environmental labeling products Faucets (HJ/T 411-2007)	The standard provides definition, basic requirements, technical content and testing procedures for faucets as environmental labeling products. This standard applies to faucets with nominal diameter of 15, 20 and 25, nominal pressure less than 1.0MPa. The faucets are used when medium temperature is below 90℃ and shall be installed onto sanitary wares in kitchen and washroom (such as toilet and bathroom), for instance, as ordinary faucets, wash basin faucets and faucets of kitchen sinks. The standard does not apply to bathtub faucets and shower faucets. The standard provides guidance only and is applicable to certification of China environmental labeling products.
Technical requirement for environmental labeling products Ready–mixed concrete (HJ/T 412-2007)	The standard provides definition, basic requirements, technical content and testing procedures for ready–mixed concrete as environmental labeling product. The standard applies to ready-mixed concrete made by centralized concrete mixing stations. The standard provides guidance only and is applicable to certification of China environmental labeling products.
Technical Requirement for environmental labeling products Remanufactured toner cartridge (HJ/T 413-2007)	The standard provides definition, basic requirements, technical content and testing procedures for remanufactured toner cartridge as environmental labeling product. The standard applies to remanufactured toner cartridge of ink jet and color laser jets, copy machine and multi function centers. The standard provides guidance only and is applicable to certification of China environmental labeling products.
Technical requirement for environmental labeling products Solvent-based wood coatings for indoor decoration and	The standard provides terminology, definition, basic requirements, technical content and testing procedures for solvent-based wood coatings for interior decoration and refurbishing as environmental labeling products. The standard applies to solvent-based top coat and primer coat that is of nitro, polyurethane and alkyd nature. It does not apply to radiation curable coating.

refurbishing (HJ/T 414 -2007)	The standard provides guidance only and is applicable to certification of China environmental labeling products.
The guidelines for the generic name of new chemical substances (HJ/T 420-2008)	The standard provides methods used to compile generic names of new chemical substances for registration application. The standard applies to compilation of generic names of new chemical substances for their registration application. The standard can also be applied to evaluation of generic names of new chemical substances applied for registration.
Standard for Medical Waste Packages, Containers and Warning Labels (HJ 421-2008)	The standard provides technical requirements, related testing methods and inspection rules for medical waste packages, sharps boxes and transfer containers (barrels) as well as medical waste warning labels. The standard applies to manufacturers of medical waste packages and containers, medical waste transport and disposal units. The standard supersedes Standard on Medical Waste Packages and Containers and Regulations on Warning Labels (SEPA Order No. (2003) 188) upon implementation. As provided by laws concerned, this standard has compulsory execution effect.

Environmental Regulations and Standards Putting into Effect as of May. 1, 2008

Regulations	
Measures on Disclosure of Environmental Information (Provisional) (SEPA Order No. 35)	Environmental information herein referred to includes environmental information released by the government and businesses. Environmental protection departments shall make government environmental information public in a timely and correct manner based on the principle of equity, fairness, convenience and objectivity. Companies should make public their environmental information in a timely and correct manner according to the principle that provides voluntary and mandatory information disclosure respectively. Citizens, legal entities and other organizations can request for environmental information to environmental protection departments.
National standard for environmental protection	
Guide of Safety-Assessment on Application of Microbial Blends in the Environmental Protection (HJ/T	The standard provides technical content and requirements on safety assessment of application of microbial blends in environmental protection. The standard applies to environmental safety assessment of microbial blends application aimed to protect eco environment and prevent and control pollution.

415-2008)	The standard does not apply to microbial blends intended for gene modification and laboratory research. This is the first time to issue the standard and it serves as guidance only.
Measurement technology guidelines for check and acceptance of air pollution control project for bulk gasoline terminal and gasoline filling station (HJ/T 431 - 2008)	The standard provides technical requirements on data collection, choice of implementation standard, on-site inspection, on-site testing and preparation of acceptance and test report on projects concerning air pollution control at oil depots and gas stations. The standard applies to acceptance and test of existing air pollution control projects at oil depots and gas stations. It is also applicable to acceptance and test of oil and gas recovery projects of new (rebuilt and expanded) oil depots and gas stations. This is the first time to issue the standard and it serves as guidance only.

Environmental Standards Putting into Effect as of June. 1, 2008

National standard for environmental protection	
Technical Requirement for Source Water Protection Area Signs (HJ/T433 - 2008)	The standard provides requirements on the type, content, position, structure, manufacture, management and maintenance of source water protection area signs. The standard applies to construction, supervision and management of standard source water protection areas. This is the first time to issue the standard and it serves as guidance only.

Environmental Standards Putting into Effect as of July 1, 2008

State Environmental Protection Standards	
Limits and Measurement Methods for the Emissions of Pollutants from Motorcycles on the Running Mode (CHINA stage III) (GB 14622-2007)	The standard stipulates the emission limits and measurement methods for the emissions of pollutants from two or three-wheeled motorcycles on the running mode, the requirements on the emission of crankcase pollutants and the requirements on the durability of pollution control equipment. The standard stipulates the requirements on stage III type verification and the methods for the checkup and determination on production conformity for two or three-wheeled motorcycles.

	This standard is applicable to two or three-wheeled motorcycles equipped with ignition engine with the complete vehicle kerb mass no more than 400kg, the engine displacement over 50mL or the designed maximum speed over 50km/h. This standard shall replace GB 14622-2002 standard upon its effective date.
Limits and Measurement Methods for Emissions of Pollutants from Mopeds on the Running Mode (CHINA stage III) (GB18176-2007)	The standard stipulates the emission limits and measurement methods for the emissions of pollutants from two or three-wheeled mopeds on the running mode, the requirements on the emission of crankcase pollutants and the requirements on the durability of pollution control equipment. The standard stipulates the requirements on stage III type verification and the methods for the checkup and determination on production conformity for two or three-wheeled mopeds. This standard is applicable to two or three-wheeled mopeds equipped with ignition engine with the complete vehicle kerb mass no more than 400kg, the engine displacement over 50mL or the designed maximum speed over 50km/h. This standard shall replace GB 18176-2002 standard upon its effective date.
Limits and Measurement Methods for Evaporative Pollutants from Motorcycles and Mopeds (GB 20998-2007)	This standard stipulates the limits and measurement methods for evaporative pollutants from motorcycles and mopeds. This standard stipulates the requirements on the type verification and the methods for the checkup and determination on production conformity of evaporative pollutants from motorcycles and mopeds. This standard is applicable to motorcycles and mopeds (hereinafter jointly referred to as motorcycles) fuelled by gasoline.
Standard for Pollution Control on the Landfill Site of Municipal Solid Waste (GB 16889-2008)	This standard stipulates the requirements on the siting, design and construction, conditions for wastes eligible for landfill and the pollution control and monitoring during the operation, closedown and post maintenance of landfill sites of municipal solid wastes.

	This standard is applicable to the pollution control and supervision over the maintenance and management during the construction, operation and closedown of landfill sites of municipal solid wastes. Some provisions of this standard are also applicable to the construction and operation of municipal solid waste transfer stations constructed as supporting facilities of landfill sites of municipal solid wastes. The Standard for Pollution Control on the Landfill of Municipal Solid Waste (GB16889-1997) shall be abolished upon the effective date of this standard. This standard is compulsory as per the stipulation of relevant laws.
Emission Standard of Coalbed Methane/Coal Mine Gas (on trial) (GB 21522-2008)	This standard stipulates the emission limit of coal mine gas as well as that of coalbed methane of coalbed methane ground development system. This standard is applicable to the gas emission control and management of existing mines and coalbed methane ground development system as well as that of newly constructed, renovated or expanded mines and during the EIA, designing and examination for acceptance upon the completion and after the completion of coalbed methane ground development project. The standard is applicable to the pollution discharge permitted by law. The siting of newly constructed mines or coalbed methane ground development system as well as the management of existing mines or coalbed methane ground development system within special protected areas shall be conducted as per relevant provisions of Article No. 16 of the Law on the Prevention of Air Pollution of the People's Republic of China. This standard is compulsory as per the stipulation of relevant laws. This standard is released for the first time.
Effluent Standards of Pollutants for Heterocyclic Pesticides Industry (GB 21523-2008)	This standard stipulates the discharge limit of water pollutants during the production process of heterocyclic pesticides of imidacloprid, tradimefon, carbendazim, paraquat, atrazine and fipronil.

	This standard is applicable to the pollutants discharge control and management of enterprises engaged in the production of imidacloprid, tradimefon, carbendazim, paraquat, atrazine and fipronil, the EIA of construction projects as well as the design of environmental protection facilities, examination for acceptance upon the completion and the discharge control after operation for construction projects. This standard is also applicable to the exercise of supervision and administration of pollution discharge of production enterprises by competent environmental protection authorities.
Technical Requirement for Environmental Labeling Products Aerosol insecticide (HJ/T 423-2008)	This standard stipulates the limit on product toxicity, benzene series and the VOC of various types of products of aerosol insecticides. This standard specifies the terminology and definition, basic requirements, technical contents and examination methods of environmental labeling products of aerosol insecticides. It is applicable to all types of aerosol insecticide products. The HJBZ 20-1997 standard shall be abolished upon the effective date of this standard. This standard is a guiding standard and is applicable to the certification of environmental labeling products of China.
Technical Requirement for Environmental Labeling Products Digital Multi-function Copier Device (HJ/T 424-2008)	This standard stipulates the definition, basic requirements, technical contents and examination method for environmental labeling product of digital multi-function copier device. This standard is applicable to copier devices using dry developer, heat fusing and plain paper with the basic function of copying such as digital copier and digital multi-function integrated copying machine (including digital multi-function copier, digital multi-function compound machine, multi-function integrated printing and copying machine and color copier). This standard shall replace HJBZ 40-2000 standard upon its effective date. This standard is a guiding standard and is applicable to the certification of environmental labeling products of China.

Technical Requirement for Environmental Labeling Products Kitchen Furniture (HJ/T 432-2008)	This standard stipulates the requirements on environmental indicators of materials used in kitchen furniture and that on reuse of wastes generated from the production process and the packaging of the products. This standard stipulates the terminology and definition, basic requirements, technical contents and examination methods for environmental labeling products of kitchen furniture. This standard is applicable to kitchen furniture of various worktops and accessories except for kitchen range and sink. This standard is a guiding standard and is applicable to the certification of environmental labeling products of China.
Technical Specification for On-board Diagnostic (OBD) System of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles (HJ 437-2008)	This standard stipulates the technical requirements and examination methods for on-board diagnostic (OBD) system of vehicle equipped with compression engine and the compression engine as well as vehicle equipped with ignition engine and the ignition engine fuelled by natural gas (NG) or liquefied petroleum gas (LPG). This standard is applicable to the type verification and production conformity checkup of compression (including gas fuelled ignition compression) engine and the OBD system equipped in M2, M3, N1, N2 and N3 type of vehicle with the designed speed over 25km/h as well as M1 type of vehicle with the total mass over 3500kg. The compression (including gas fuelled ignition compression) engine equipped in N1 and M2 type of vehicle can be exempted from the type verification stipulated in this standard should such vehicles have already undergone the OBD system type verification as per the stipulation of Limits and Measurement Methods for Emissions from Light-Duty Vehicles (GB18352.3-2005). This standard is released for the first time.

Durability of Emission Control Systems of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles (HJ 438-2008)	This standard stipulates the technical requirements (including measurement methods) over the durability of emission control system of vehicle equipped with compression engine and the compression engine as well as vehicle equipped with ignition engine and the ignition engine fuelled by natural gas (NG) or liquefied petroleum gas (LPG). This standard is applicable to the type verification over the durability of emission control system of compression (including gas fuelled ignition compression) engine and the OBD system equipped in M2, M3, N1, N2 and N3 type vehicle with the designed speed over 25km/h as well as M1 type vehicle with the total mass over 3500kg. The relevant requirements of this standard can be exempted for N1 and M2 type of vehicle equipped with compression (including gas fuelled ignition compression) engine should such vehicles meet the technical requirements on durability of Limits and Measurement Methods for Emissions from Light-Duty Vehicles (GB18352.3-2005). This standard is released for the first time.
In-service Conformity of Compression Ignition and Gas Fuelled Positive Ignition Engines of Vehicles (HJ 439-2008)	This standard stipulates the technical requirements on the in-service/engine conformity of vehicle equipped with compression engine and the compression engine as well as vehicle equipped with ignition engine and the ignition engine fuelled by natural gas (NG) or liquefied petroleum gas (LPG). This standard is applicable to the checkup of in-service/engine conformity of compression (including gas fuelled ignition compression) engine and the OBD system equipped in M2, M3, N1, N2 and N3 type of vehicle with the designed speed over 25km/h as well as M1 type of vehicle with the total mass over 3500kg. The relevant requirements of this standard can be exempted for N1 and M2 type of vehicle equipped with compression (including gas fuelled ignition compression) engine should such vehicles have undergone the in-service conformity checkup as per the Limits and Measurement Methods for Emissions from Light-Duty Vehicles (GB18352.3-2005). This standard is released for the first time.

The following standards shall be abolished upon the effective date of the aforesaid standards:
Limits and Measurement Methods for Exhaust Emissions from Motorcycles under Running Mode (GB 14622-2002)
Limits and Measurement Methods for Exhaust Emissions from Mopeds under Running Mode (GB 18176-2002)
Standard for Pollution Control on the Landfill Site for Domestic Waste (GB 16889-1997)
Technical Requirement for Environmental Labeling Products-Healthy Aerosol Insecticide (HJBZ 20-1997)
Technical Requirement for Environmental Labeling Products-Copier (HJBZ 40-2000)

Environmental Regulations and Standards Putting into Effect as of Aug. 1, 2008

Sector Regulations	
National Catalogue of Hazardous Waste (No.1 Order of Ministry of Environmental Protection)	Solid and liquid waste with one of the following situations are included in the current catalogue: (1) having one or several hazardous characteristics such as corrosion, toxicity, combustibility, reactivity or infection; (2) those waste not excluding hazardous characteristics and may impose harmful impacts on the environment or human health and in need of the management as hazardous waste. Medical waste belongs to hazardous waste. The Classified Catalogue of Medical Waste will be separately developed and made public based on Regulations on the Management of Medical Waste. According to the requirement for environmental management of hazardous waste, the competent environmental protection administrative department of the State Council will make appropriate adjustment of the catalogue at proper time and make it public. The current catalogue shall put into effect as of August 1, 2008. Meanwhile, the National Catalogue of Hazardous Waste (Huanfa [1998]No.89) issued by the State Administration of Environmental Protection, National Economic and Trade Commission, Ministry of Economic Cooperation and Foreign Trade and Ministry of Public Security on January 4, 1998 shall be nullified.
National Environmental Protection Standards	
Technical Guidance for the Development of Clean Production Standard (HJ/T 425-2008)	The current standard specifies such contents as the framework structure, principle, rules and work procedures, contents, methods and format for the development of sector clean production standards. The current standard is applicable to the development of sector clean production standard. The current standard is issued for the first time and is a guiding standard.
Clean Production Standard--Iron &	The current standard specifies the general requirements for clean production of the enterprises in iron & steel industry (sintering).

Steel Industry (Sintering) (HJ/T 426-2008)	The current standard is applicable to the clean production examination; judgment of the potential and opportunity of clean production; assessment & publication system of the performance of clean production of the enterprises with sintering production process in iron & steel industry. It is also applicable to environmental management systems such as EIA and pollution discharge license. The current standard is issued for the first time and is a guiding standard.
Clean Production Standard--Iron & Steel Industry (Blast furnace iron smelting) (HJ/T 427-2008)	The current standard specifies the general requirements for clean production of the enterprises in iron & steel industry (blast furnace iron smelting). The current standard is applicable to the clean production examination; judgment of the potential and opportunity of clean production; assessment & publication system of the performance of clean production of the enterprises with blast furnace iron smelting production process in iron & steel industry. It is also applicable to environmental management systems such as EIA and pollution discharge license. The current standard is issued for the first time and is a guiding standard.
Clean Production Standard--Iron & Steel Industry (Steel Smelting) (HJ/T 428-2008)	The current standard specifies the general requirements for clean production of the enterprises in iron & steel industry (Steel smelting). The current standard is applicable to the clean production examination; judgment of the potential and opportunity of clean production; assessment & publication system of the performance of clean production of the enterprises with steel smelting production process in iron & steel industry. It is also applicable to environmental management systems such as EIA and pollution discharge license. The current standard is issued for the first time and is a guiding standard.
Clean Production Standard--Chemical Fiber Industry (Polyester Fibre) (HJ/T 429-2008)	The current standard specifies the general requirements for clean production of the enterprises in chemical fiber industry (polyester fibre). The current standard is applicable to the clean production examination; judgment of the potential and opportunity of clean production; assessment & publication system of the performance of clean production of the enterprises that employ p-phthalic acid direct esterifying method to produce polyester and manufacture terylene fiber with polyester as raw materials. It is also applicable to environmental management systems such as EIA and pollution discharge license. The current standard is issued for the first time and is a guiding standard.

Clean Production Standard--Calcium Carbide Industry (HJ/T 430-2008)	The current standard specifies the general requirements for clean production of the enterprises in calcium carbide industry. The current standard is applicable to the clean production examination; judgment of the potential and opportunity of clean production; assessment & publication system of the performance of clean production of the enterprises in calcium carbide industry. It is also applicable to environmental management systems such as EIA and pollution discharge license. The current standard is issued for the first time and is a guiding standard.
Technical Specifications for the Check & Acceptance of Environmental Protection Facilities of Construction Projects--Port (HJ 436-2008)	The current standard specifies relevant requirement and specifications for environmental check & acceptance of complete port construction projects. The current standard is applicable to the environmental protection check & acceptance of the completed new, rebuild, expansion and technical reform projects of port (sea port and inland river harbor). It is also applicable to routine supervision and management of post-completion construction projects. The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pulp and Paper Industry (GB 3544--2008)	The current standard specifies the water pollutant discharge limit for pulp and paper making enterprises or production facilities. The current standard is applicable to the management of water pollutant discharge of existing pulp and paper making enterprises or production facilities. The current standard is applicable to the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of pulp and paper making industry. The current standard is applicable to the pollution discharge permitted by law. The site selection of new pollution sources and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution and Law of the People's Republic of China on Environmental Impact Assessment.

	The control requirements for the discharge of water pollutants specified in the current standard are also applicable to pollution discharge into environmental water bodies by enterprises. In case that enterprises discharge industrial effluent into the drainage system of city or town that have sewage treatment facilities, toxic pollutants may absorb AOx and dioxin, so the monitoring sites specifies by the current standard shall comply with relevant discharge limit. The control of the discharge of other pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to the competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case a construction project is going to discharge waste water into the drainage system of city or town that has sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. Discharge Standard of Water Pollutants for Paper Industry (GB 3544--2001) and the Circular on Revision of Discharge Standard of Water Pollutants for Paper Industry(Huanfa[2003]No.152) will be nullified since the date when the current standard puts into effect.
Emission Standard of Pollutants for Electroplating (GB 21900--2008)	The current standard specifies such contents as the discharge limit for electroplating water pollutant and air pollutant emission limit of electroplating enterprises and enterprises with electroplating facilities. The current standard is applicable to the management of water pollutant discharge and air pollutant emission of existing electroplating enterprises. The current standard is applicable to the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water & air pollutant discharge management after putting into operation of the construction projects of electroplating industry. The current standard is applicable to anode oxidation surface treatment technological facilities.

	The current standard is applicable to the pollution discharge permitted by law. The site selection of new pollution sources and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case an enterprise discharges industrial effluent into the drainage system of a city or town with sewage treatment facilities, the concentrations of toxic pollutants such as total Cr, Cr6+, Ni, Cd, Ag, Pb and Hg at the monitoring sites specifies by the current standard shall comply with relevant national standard. The control of the discharge of other pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case a construction project is going to discharge waste water into the drainage system of city or town that has sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water & air pollutants discharge of electroplating enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996) and Integrated Emission Standard of Air Pollutants (GB 16297-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants	The current standard specifies water pollutant discharge limit for down enterprises or production facilities.

for Down Industry (GB 2190--2008)	The current standard is applicable to the management of water pollutant discharge of existing down enterprises or production facilities. The current standard is applicable to the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water & air pollutant discharge management after putting into operation of the construction projects of down industry. The current standard is applicable to the pollution discharge permitted by law. The site selection of new pollution sources and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case an enterprise discharges industrial effluent into the drainage system of a city or town with sewage treatment facilities, the control of its pollutant discharge is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water & air pollutants discharge of down industry shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.

Emission Standard of Pollutants for Synthetic Leather and Artificial Leather Industry (GB 21902--2008)	The current standard specifies such contents as the special production process and the limits for waste water and air pollutants of synthetic feather and artificial enterprises. The current standard is applicable to the management of the discharge of water and air pollutants from the special production process & facilities of existing synthetic leather and artificial leather enterprises. The current standard is applicable to the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water & air pollutant discharge management after putting into operation of the construction projects of synthetic leather and artificial leather industry. The current standard is applicable to the pollution discharge permitted by law. The site selection of new pollution sources and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case an enterprise discharges industrial effluent into the drainage system of a city or town with sewage treatment facilities, the control of its pollutant discharge is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions.

	The control of water & air pollutants discharge of synthetic leather and artificial leather enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996) and Integrated Emission Standard of Air Pollutants (GB 16297-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pharmaceutical Industry--Fermentation Products Category (GB 21903--2008)	The current standard specifies such requirements as the discharge limit for water pollutants, monitoring and control requirements, implementation and supervision of relevant standard of fermentative pharmaceutical industry. The current standard is applicable to the prevention, control and management of water pollution of fermentative pharmaceutical enterprises--fermentation products category as well as the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of pharmaceutical industryp-fermentation products category. The prevention, control and management of water pollution of animal medicine manufacturers with the structure similar to such pharmaceuticals may also refer to the current standard. The current standard is applicable to water pollution discharge permitted by law. The site selection of new fermentative pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises.

	In case an enterprise discharges industrial effluent into the drainage system of a city or town with sewage treatment facilities, the control of its pollutant discharge is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water & air pollutants discharge of fermentative pharmaceutical industry--fermentation products category shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pharmaceutical Industry--Chemical Synthesis Products Category (GB 21904--2008)	The current standard specifies such requirements as the discharge limit for water pollutants from chemical synthetic pharmaceutical industry, monitoring and supervision requirements as well as the implementation & supervision of relevant standard. The current standard is applicable to the prevention, control and management of water pollution of chemical synthetic pharmaceutical enterprises as well as the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of chemical synthetic pharmaceutical industry. It is applicable to medicine intermediate manufacturers (e.g. fine chemical manufacturers) that specially provide raw materials for the production of pharmaceuticals. The prevention, control and management of water pollution of animal medicine manufacturers with the structure similar to chemical synthetic pharmaceuticals may refer to the current standard, too.

	The current standard is applicable to the pollution discharge permitted by law. The site selection of new chemical synthetic pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case an enterprise discharges industrial effluent into the drainage system of a city or town with sewage treatment facilities, the concentrations of toxic pollutants such as total Cd, mercury alkyl, Cr6+, As, Pb, Ni, and Hg at the monitoring sites specifies by the current standard shall comply with relevant national standard. The control of the discharge of other pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water pollutants discharge of chemical synthetic pharmaceutical enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pharmaceutical Industry--Extraction Products Category	The current standard specifies such requirements as the discharge limits for water pollutants of extraction pharmaceutical (excluding Chinese herbal medicines) enterprises, monitoring and control requirement as well as the implementation & supervision of relevant standard.

(GB 21905--2008)	The current standard is applicable to prevention, control and management of water pollution of extraction pharmaceutical enterprises as well as the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of extraction pharmaceutical industry. The prevention, control and management of water pollution of animal medicine manufacturers with the structure similar to extraction pharmaceuticals may refer to the current standard, too. The current standard is applicable to the pharmaceutical manufacturers that manufacture pharmaceuticals mainly by the extracting national plants and animals or marine creatures, rather than from chemical modification or artificial synthesis. It is not applicable to the pharmaceutical enterprises that manufacture such medicines as the derivative or similar substance of basic bio-chemical substances, fungus and its extract, preparations using animal organs or tissue as well as small animals by adopting methods including chemical synthesis and semi-synthesis. The current standard is applicable to water pollution discharge permitted by law. The site selection of new extraction pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case that an enterprise discharges waste water into the drainage system of city or town with sewage treatment facilities, the control of the discharge of its pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions.

	The control of water pollutants discharge of extraction pharmaceutical enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pharmaceutical Industry--Chinese Traditional Medicine Category (GB 21906--2008)	The current standard specifies such requirements as the discharge limit for water pollutants of Chinese traditional medicine enterprises, pollution monitoring & control requirement as well as the implementation & supervision of relevant standard. The current standard is applicable to the prevention, control and management of water pollution of Chinese traditional medicine enterprises as well as the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of Chinese medicine industry. The current standard is applicable to the industrial enterprises that employ plants and animal components as main raw materials and manufacture the powder or tablet of Chinese traditional medicine and various preparations of finished Chinese traditional medicines in accordance with National Pharmaceutical Code. The prevention, control and management of water pollution of the traditional ethnic medicine manufacturers like Tibet and Inner Mongolia as well as manufacturers of the pharmaceuticals for animals whose structure is similar to Chinese herbal medicines may also refer to the current standard. When Chinese herbal medicine enterprises extract some special medicine ingredient, they shall comply with discharge standard of water pollutants for extraction pharmaceutical industry. The current standard is applicable to water pollution discharge permitted by law. The site selection of new Chinese traditional pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises.

	In case that an enterprise discharges waste water into the drainage system of city or town with sewage treatment facilities, the concentrations of toxic pollutants such as mercury and arsenic at the monitoring sites specified in the current standard shall comply with relevant national pollutant discharge standard. The control of the discharge of its pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water pollutants discharge of Chinese traditional medicine enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Pharmaceutical Industry--Bio-pharmaceutical Category (GB 21907--2008)	The current standard specifies such requirements as the discharge limit for water pollutants of bio-pharmaceutical enterprises, pollution monitoring & control requirement as well as the implementation & supervision of relevant standard. The current standard is applicable to the prevention, control and management of water pollution of bio-pharmaceutical enterprises as well as the EIA, design of environmental protection facilities, environmental protection check and acceptance of completed projects and water pollutant discharge management after putting into operation of the construction projects of bio-pharmaceutical industry.

	The current standard is applicable to those enterprises that employ modern biotechnology (mainly genetic engineering technologies) to prepare such pharmaceuticals as polypeptide and protein medicines as well as vaccine for the purposes including treatment and diagnosis. However, the current standard is not applicable to the manufacturers that employ traditional micro-organism fermentation technology to make such medicines as antibiotic and vitamin. Research & development institutions engaged in bioengineering pharmaceuticals may comply with the current standard. The current standard is applicable to the prevention, control and management of water pollution of the enterprises using similar bioengineering technology to make pharmaceuticals for animals. The current standard is applicable to water pollution discharge permitted by law. The site selection of new bio-pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case that an enterprise discharges waste water into the drainage system of city or town with sewage treatment facilities, the control of the discharge of its pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water pollutants discharge of bio-pharmaceutical industry shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.

Discharge Standard of Water Pollutants for Pharmaceutical Industry--Mixing/Compunding and Formulation Category (GB 21908--2008)	The current standard specifies such requirements as the discharge limits of water pollutants from pharmaceutical industry--mixing/compounding and formulation category, monitoring & control requirement as well as the implementation of relevant standard and supervision on the implementation. The current standard is applicable to the prevention, control and management of water pollution of pharmaceutical industry--mixing/compounding formulation category. It is also applicable to EIA, design of environmental protection facilities, post-completion environmental check & acceptance of the construction projects of pharmaceutical industry--mixing/compounding formulation category as well as the prevention, control and management of water pollution of the project after its putting into operation. The current standard is also applicable to the prevention, control and management of water pollution of the enterprises that turn active medicine ingredients into pharmaceutical for animals through such processes as mixing, processing and formulation. However, it is not applicable to Chinese patent drug enterprises. The current standard is applicable to the pollution discharge permitted by law. The site selection of new mixed preparation pharmaceutical enterprises and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws as the Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutants specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises. In case that an enterprise discharges waste water into the drainage system of city or town with sewage treatment facilities, the control of the discharge of its pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions.

	The control of water pollutants discharge of pharmaceutical industry--mixing/compounding and formulation category shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
Discharge Standard of Water Pollutants for Sugar Industry (GB 21909--2008)	The current standard specifies the discharge limits of water pollutants from sugar making enterprises or production facilities. The current standard is applicable to the management of the discharge of water pollutants of existing sugar enterprises or production facilities. The current standard is applicable to the EIA, design of environmental protection facilities, and post-completion environmental check & acceptance of the construction projects of sugar industry as well as the management of water pollutant discharge of the project after its putting into operation. The current standard is applicable to the pollution discharge permitted by law. The site selection of new pollution sources and management of existing pollution sources in special protected areas shall comply with relevant provisions of such laws and regulations as the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution, Law of the People's Republic of China on the Prevention and Control of Water Pollution, Law of the People's Republic of China on Marine Environmental Protection, Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste, Law of the People's Republic of China on the Prevention and Control of Radioactive Pollution and Law of the People's Republic of China on Environmental Impact Assessment. The requirements for the control of water pollutant discharge specified in the current standard are also applicable to the discharge of water pollutants into environmental water bodies by enterprises.

	In case that an enterprise discharges waste water into the drainage system of city or town with sewage treatment facilities, the control of the discharge of its pollutants is subject to the consultation between the enterprise and urban sewage treatment plant in accordance with treatment capacity or shall comply with relevant standard and report to local competent environmental protection administrative department for file. Urban sewage treatment plant shall ensure that the discharge of pollutants meet relevant national pollution discharge standard. In case that a construction project is going to discharge waste water into the drainage system of city or town with sewage treatment facilities, the construction unit and urban sewage treatment plant shall comply with the proceeding provisions. The control of water & air pollutants discharge of sugar making enterprises shall comply with the requirements of the current standard beginning from the date when it puts into effect and shall no longer comply with Integrated Wastewater Discharge Standard (GB 8978-1996). The current standard is issued for the first time in China.
The following regulations and standard will be nullified since the date of the implementation of the above regulations & standards:	
National Catalogue of Hazardous Waste [Huanfa (1998) No.89]	
Discharge Standard of Water Pollutants for Paper Industry (GB 3544 - 2001)	

Environmental regulations and standards that go to effect as of September 1

National Environmental Protection Standard	
Technical Specifications on Dust Removal Projects in Cement Industry (HJ 434-2008)	The current standard specifies the technical requirements for the design, construction, check & acceptance and operation of dust removal projects of the cement industry. The current standard is applicable to the whole-process management including the design, construction, check & acceptance as well as operation of the new, reform or expansion projects on dust removal in cement industry and operational management of built dust removal project. It can be served as the technical basis for EIA of construction project of cement industry, design and construction of environmental protection facilities, environmental check & acceptance of construction projects and operation and management of such projects.

	The current standard is form the first time in China.
Technical Specifications on Dust Removal Projects in Iron & Steel Industry (HJ 435-2008)	The current standard specifies the principle & measures for treating smoke (dust) of main production process of iron & steel industry as well as the technical requirements for the design, construction, check & acceptance and operation of dust removing projects in the industry. The current standard is applicable to the whole-process management including the design, construction, check & acceptance as well as operation of the new, reform or expansion projects on dust removal in iron & steel industry and operational management of built dust removal project. It can be served as the technical basis for EIA of construction project of iron & steel industry, design and construction of environmental protection facilities, environmental check & acceptance of construction projects and operation and management of such projects. The current standard is form the first time in China.
Technical ecificatiosn for nvironmental elling Products--ecoration and nishing Projects HJ 440-2008)	The current standard specifies the terminology and definition, basic requirements and technical contents for building decoration and furnishing projects as well as its testing method. The current standard is applicable to the civil building decoration and furnishing projects that are new, expanded or reformed, which usually are divided into organizational project and individual project (building group). According to the requirement, it can be carried out in two stages, i.e. planning & design stage and check & acceptance stage. The current standard is applicable to the certification of environmental labeling products in China.

Environmental regulations and standards that go to effect as of October 1

Rules and regulations of the Ministry	
Name List of Construction Projects for Category Management of Environmental Impact Assessment (No. 2 Order of Ministry of Environmental Protection)	The state authority exercises category management of EIA of construction projects based on the extent of impact construction projects will have on the environment. In line with provisions of the Name List, construction agencies shall undertake the responsibility of preparing environmental impact statement (EIS) and environmental impact form (EIF) or filling in environmental impact registration form. The nature and extent of sensitivity of the environment where construction projects are located are major basis for determining the category of EIA. EIA category of cross-sector and comprehensive construction projects shall be determined according to the highest level of individual indicators. For construction projects not included in the name list, the EIA category shall be proposed by provincial environmental protection department to the competent national environmental protection authority under the State Council for approval according to the characteristics of pollution factors and ecological influence factors of the projects as well as the nature and extent of sensitivity of the environment that the projects are located in. The national environmental protection authority under the State Council is held responsible for the interpretation of the name list and for its revision and announcement accordingly. The name list shall take effect upon Oct. 1, 2008 and the Name List of Construction Projects for Category Management of Environmental Protection (SEPA Order No. 14) will be abolished at the same time.
National environmental protection standards	
Environmental Quality Standard for Noise (GB 3096-2008)	This standard provides the limits and their measurement methods for noise in the five kinds of acoustic environment function zones. This standard shall be enforced according to relevant legal provisions. The standard shall apply to the evaluation and regulation of the quality of acoustic environment. The impact caused by the noise of aircraft on the neighborhood of the airdrome during their passes (takeoff, landing, and flyover) shall not be regulated by this standard. This standard is the amendment to Standard of Environmental Noise of Urban Area (GB 3096-93) and Measuring Method of Environmental Noise of Urban Area (GB/T 14623-93), which will be abolished as of the day this standard goes to effect.

Emission Standard for Industrial Enterprises Noise at Boundary (GB 12348-2008)	This standard provides the emission limits and measurement methods for industrial enterprises and fixed equipment noise at boundary. This standard shall be enforced according to relevant legal provisions. This standard shall apply to the regulation, evaluation and control of the noise emissions for the industrial enterprises. State organs, public institutions and social groups that emit noise to the ambient shall also be regulated by this standard. This standard shall replace Standard of Noise at Boundary of Industrial Enterprises (GB12348-90) and Method of Measuring Noise at Boundary of Industrial Enterprises (GB12349 -90) as of the day it goes to effect.
Emission Standard for Community Noise (GB 22337-2008)	According to existing laws that provide that community noise sources shall emit noise up to standards, this standard provides the noise emission limits and measurement methods for the boundaries of the equipment and facilities that may cause noise pollution in the profitable cultural and recreational places and in business activities. This standard shall be enforced according to relevant legal provisions. This standard shall apply to the regulation, evaluation and control of equipment and facilities that are used by profitable cultural and recreational places and business activities and that emit noise to the ambient. This standard is the first of its kind.
The following regulations and standards shall be abolished as of the day the above said regulations and standards go to effect:	
Name List of Construction Projects for Category Management of Environmental Protection (SEPA Order No. 14)	
Standard of Environmental Noise of Urban Area (GB 3096-93)	
Measuring Method of Environmental Noise of Urban Area (GB/T 14623-93)	
Standard of Noise at Boundary of Industrial Enterprises (GB12348-90)	
Method of Measuring Noise at Boundary of Industrial Enterprises (GB12349 -90)	

7 INTERNATIONAL CONVENTIONS

Taking environmental protection as an important field for China's opening up; China keeps on its opening up and play a more active role in international environmental affairs.

China actively take part in global environmental protection adhering to the principle of "common but differentiated responsibilities", China will actively participate in international environmental conventions

Box 3 International Environmental Conventions with China as a Party		
Name of Convention	Ratifying time	Department in charge
Convention on International Trade in Endangered Species of Wild Fauna and Flora	April 8, 1981	State Forestry Administration (SFA)
Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter	September 6, 1985	State Oceanic Administration
The Vienna Convention for the Protection of the Ozone Layer	September 11, 1989	SEPA
London Amendment for Montreal Protocol on Substances that Deplete the Ozone Layer	June 14, 1991	SEPA
Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal	September 4, 1991	SEPA
Ramsar Convention	July 31, 1992	SFA
Convention on Biological Diversity	November 7, 1992	SEPA
United Nations Framework Convention on Climate Change	November 7, 1992	NDRC
Convention on Nuclear Safety	April 9, 1996	SEPA
Convention on the Prevention and Control of Desertification	December 30, 1996	SFA
Amendment of the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their	May 1, 2001	SEPA
Disposal		
Kyoto Protocol	August 1, 2002	NDRC
Copenhagen Amendment for Montreal Protocol on Substances that Deplete the Ozone Layer	April 22, 2003	SEPA
Stockholm Convention on Persistent	June 25, 2004	SEPA

Organic Pollutants		
Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals in International Trade	December 29, 2004	SEPA
Cartagena Protocol on Bio-safety	April 17, 2005	SEPA
1996 Amendment of the Convention on the Prevention of Marine Pollution by Dumping Wastes and Other Matter	June 29, 2006	State Oceanic Administration

8 ENVIRONMENTAL LEGISLATION RELATED TO ESTABLISHING A FACTORY IN CHINA

Foreign investors in China cannot afford to take a lax approach towards compliance with environmental legislation. It is obviously the law is becoming much more comprehensive and is applied stringently to international firms.

It is obviously environmental controls are now in the design of most new legislation and national infrastructure projects. The current 11th five-year plan of China was the first to contain a special chapter on strategies for incorporating environmental sustainability practices in the development of the national economy. Key areas for legislative development include: wastewater treatment and recycling, groundwater exploration controls, protection of important mining resources, desertification controls and a forestation, air pollution prevention, and the improvements of waste management and treatment capabilities.

As the economy continues to grow, China's environmental challenges will become even more complex. The strengthening of legislation will be among the key instruments used to meet this challenge. For foreign investors, this means having to work within an increasingly comprehensive environmental legislative framework, which will continue to move closer to international standards. Furthermore, although local environmental protection bureaus (EPB) lack financial and technical resources to administer and enforce the law uniformly throughout the country, foreign companies will continue to be monitored closely, as they are seen as having the means and experience to minimize pollution.

Current legislation related to factory establishment
In the past 8 years, there have been major amendments to China's environmental legislation and promulgation of many new standards and regulations. Foreign investors must fully understand and respond to this evolving regulatory environment. Otherwise they risk non-compliance and developing an environmental strategy that fails to anticipate future impacts upon business.

Essentially the regulatory framework is sound, and has been approaching international standards for some time. Legislation dealing with industrial pollution has become increasingly comprehensive and responsive to industrial developments. The Environmental Protection Law (1989) established a good 'command and control' legislative framework, which is supported by economic disclosure instruments, such as those associated with pollution levies and fines

for noncompliance. Other environmental laws outline goals, policies and requirements for the protection of various environmental areas, such as the atmosphere and surface and ground water, and specify control requirements for specific materials such as solid wastes.

China's overall industrial pollution control strategy is to encourage cleaner production, expand mass pollution controls, centralize waste treatment and encourage public participation. Investors in China can expect regulatory developments to continue along these lines.

The adoption of the ISO 14001 environmental management system certificate will continue to be encouraged, as it is believed to be an ideal way to support cleaner production and ensure regulatory compliance with the minimum allocation of government resources. The initiative will be supported by the promulgation of a cleaner production law expected later this year.

New pollution discharge fee

The trend away from concentration-based to mass-based controls will be reinforced by the development of a new pollution discharge fee. The fee will no longer be based on the concentration of individual pollutants, but instead on the degree of environmental impact of all pollutants discharged. In addition, the original practice of channeling 20 per cent of the fee into environmental protection administration has been discontinued. The levy will now be collected and distributed centrally and used to compensate for any environmental damage caused.

Environmental Impact Assessment

A revised Environmental Impact Assessment (EIA) Law is expected to include strategic aspects, allowing its application to be extended to industrial parks and the creation of conservation areas. In effect, the new law will attempt to deal with the cumulative environmental impacts of a development, not just the impacts of an industrial facility. It will also strengthen public participation. Although participation is required in current environmental impact assessment, putting this into practice has proved difficult. After the revision's approval, public participation will be essential to EIAs, which means effective communication between enterprises and the public will become more significant during project development. However, it is important to note that a completed EIA will still be a technical document falling short of international standards in that it does not include a social impact assessment. Those companies that require an international standard EIA should compare the locally prepared EIA with international standards to identify gaps.

In the long-term, regulations in the pipeline include the preparation of 'superfund'- type legislation similar to that in the US, which holds generators liable for past polluting practices. It is unclear when this law will be promulgated, although experts estimate within five to 10 years. It is imperative for investors to record the status of soil and groundwater quality with the local EPB - this way they can avoid being held accountable for contamination caused before they acquired the site. It is also important to use a locally qualified laboratory to authorize any analytical results when acquiring sites in China with their local

EPB.

Various actions need to be considered by prospective investors.
An environmental impact assessment is the basis of China's industrial pollution control legislation and is required by law for all industrial or development- related investments in China, including joint ventures and wholly foreign-owned enterprises. However, since the preparation of an EIA does not begin until after the proposed project site has already been selected, there are several other important factors that must be considered.

1. A local EPB's power originates from its relationship with other government departments. Therefore the most important step in establishing a facility in China is to undertake project proposal discussions with local departments of all ministries and agencies that may have jurisdiction over a proposed project. This helps to minimize future complications regarding project design and compliance, as well as jurisdictional battles between government authorities.

2. Another crucial step is to ensure that the local EPB and/or the State Environmental Protection Administration (SEPA) recommend an appropriate institute to conduct an EIA. Despite nationwide efforts to separate regulation from implementation, some EPBs generate additional revenues by directing clients to a preferred EIA subsidiary. Failure to adhere to their advice in this regard would almost certainly result in EIA approval difficulties. The assignment of an EIA is usually taken as evidence of an EPB's tacit approval of the site and project.

3. Unregulated industrial development has resulted in considerable unrecorded site contamination in China, and it is therefore imperative to conduct a due diligence environmental site assessment at any proposed site prior to establishing a facility. The results identify conditions associated with past site activities, particularly soil and groundwater contamination, in order to minimize future liability.

4. In general, prior to initiating an EIA, land-use rights should be approved by the Ministry of Land and Resources. However, the land lease contract made between an international company and a local Chinese venture partner often incorporates land-use rights, in which case additional approval by the ministry is not required. However, certain areas are off-limits to industrial locations based on drinking water locations, acid rain zones and prevailing winds. It is therefore important to involve the ministry from the beginning, and incorporate their suggestions and comments into a feasibility study.

5. To obtain a construction permit, an investor must apply either to the construction ministry or the government body at the municipal or provincial level with direct jurisdiction over the project. An application must be accompanied by documentation of several key tasks, including a demonstrated involvement of the appropriate EPB and a basic understanding of the environmental issues involved.

6. Once project proposal approval is granted and the application for the construction permit is submitted, the project must be registered with the appropriate EPB as the first task in initiating the feasibility study and EIA.

7. A feasibility study must be prepared by an accredited design, engineering, environmental protection or research institute. The study will document site selection decisions and approval, as well as financial and technical feasibility issues. A review of this document is the only opportunity that the EPB has to influence and approve decisions at this stage of the project.

8. An EIA follows a format specified by national guidelines and the cost is set at 0.05- 0.5 per cent of the total investment. There are four distinct stages of an EIA: The scoping phase involves a review of the proposed project and its impact on the environment and formulation of a scope of work. It is presented to an EPB review panel as terms of reference report. In general, EIAs primarily assess impacts associated with the operational phase of a project and are less concerned with construction impacts.
The baseline phase involves investigating and evaluating the environmental and social baseline conditions to include a description of the project, raw materials and energy consumption, production processes flow diagram, pollution sources, treatment measures to control pollution sources, and landscaping and safety issues. Prediction involves evaluation and forecasting of environmental impacts. Impact assessment phase focuses on the impacts on waste, water, air, noise and human health.

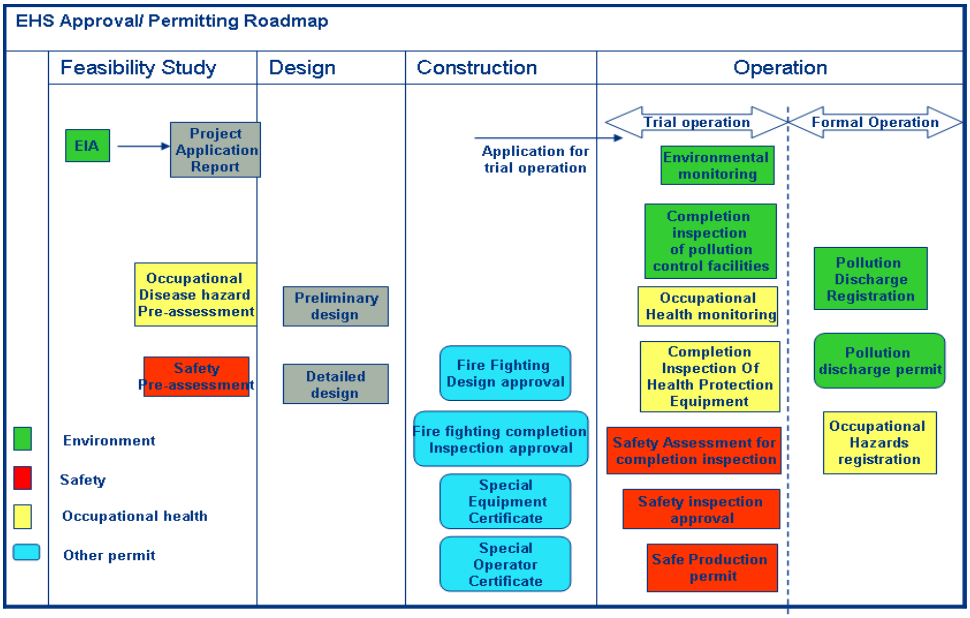
9. Yanshou inspection. .Following the trial operation period of about three months, an inspection of technical, financial, health, safety and environmental aspects of the completed project must be conducted. Known as the Yanshou inspection, this is a certification procedure that aims to ensure compliance with all relevant regulations in addition to environmental issues.

10. Applications for contaminated wastewater discharge, air emissions and waste generation and disposal for new, expanded or upgraded projects should be submitted within one month after approval of the Yanshou inspection. EPBs above county level are responsible for supervision and management of pollutant discharge permit applications.

Normally, it takes three to six months to fulfill the above EIA management procedures and obtain final approval. Compliance with standards stipulated within the EIA report and existing environmental legislation will be monitored by the EPB roughly twice a year, but facilities are also strongly encouraged to undertake self monitoring programs to maintain an accurate record of compliance statistics.

With the incorporation of crimes against the environment contained in China's 1997 Criminal Law, polluters face severe punishment for actions that were not previously considered criminal. Local officials are also now held accountable for proper enforcement of environmental laws, in what is seen as a landmark achievement by central authorities to gain control over often-reckless regional economic development at the expense of the environment.

Figure 5 EHS Approval/Permitting Roadmap



9 NEW OPPORTUNITIES AND BARRIES FOR FINNISH COMPANIES

As mentioned several times in this report, the China environmental laws are rather well in place. The largest problem lies with implementation. The changes in the legislation will only bring about the opportunities for Finnish companies when the implementation is done properly.

China's environmental issues must be addressed in accordance with planning supported by engineering projects and guaranteed by investment. New opportunity can be seen from China "11th Five-Year Plan" implementing environmental plan and projects, especially to know the investment direction.

9.1 Key projects

China will take great effort on the projects listed in the "11th Five-Year Plan". A number of new engineering projects will be further assessed and reviewed. It is planned that 10 key environmental protection projects will be carried out during the "11th Five-Year" period. With mobilization of various resources and opening diversified investment channel, China will concentrate its resources and capital for the implementation of projects.

Box 4 Key Environmental Protection Projects during the "11th Five-Year Plan" Period

Capacity building for environmental supervision: It will include such activities as the construction of environmental quality monitoring network; strengthening environmental law enforcement; development of automatic on-line monitoring system for key pollution sources under national monitoring program, emergency response system for suddenly occurred environmental accidents, comprehensive environmental assessment system, "Jinhuan" project, innovation in environmental science & technology to support capacity building. Hazardous and medical waste disposal project: Complete the construction of 31 provincial hazardous waste disposal centers and 300 medical waste disposal centers in all cities with administrative districts. Chromium slag pollution treatment projects: comprehensive treatment of chromium slag stockpile and the polluted soil will be carried out.

9.2 Investment Focus

To achieve environmental protection targets of the "11th Five-Year Plan" the estimated environmental protection investment should account for 1.35% of GDP of the same period.

1. *Water pollution treatment* To achieve the target of 10% reduction of total COD discharge, engineering measures must be taken to reduce COD by 4 million tons in which 3 million tons reduction will be realized by a new addition of urban waste water treatment capacity of 45 million tons per day, one million tons reduction by industrial waste water treatment. Water pollution control will be the top priority for environmental investment.

2. Air pollution control To achieve the target of 10% reduction of SO2 emission, engineering measures must be taken to reduce SO2 emissions from existing thermal power plants by 4.9 million tons in addition to the installation of desulphurization facilities in all newly built coal fired power plants during the "11th Five-Year Plan" period. This will make the installed capacity of existing thermal power generating unites with desulphurization devices reaching 213 million kW. In addition, flue gas desulphurization projects of sintering machines of iron & steel industry will reduce 300000 t of SO2. China will also promote comprehensive treatment of air pollution with such measures as the control of industrial waste gases of other industries, concentrated urban heat supply and gas supply.

3. Solid waste treatment China will keep on the implementation of the plan for the construction of disposal facilities for hazardous and medical waste. It is expected that another 240,000 t/d capacity in innocuous disposal of urban garbage will be added. China will facilitate the treatment of solid waste including the disposal and comprehensive use of industrial solid waste and waste electric appliances.

4. Nuclear safety and treatment of radioactive waste The focus will be the construction of disposal facilities of the waste with medium and low radioactivity from decommissioned nuclear facilities as well as pollution prevention and control facilities of uranium mining.

5. Rural pollution control and ecological conservation China will carry out environmental protection action plan for Xiaokang countryside, initiate rural environmental

control, investigate and remedy soil pollution, and reinforce the development of key eco function protected areas and nature reserves.

6. Capacity building China will develop advanced early warning system for environmental monitoring, well established environmental law enforcement supervision system and strengthen environmental science & technology as well as industrial supporting capacity.

9.3 Source of Investment

Two sources will be into the focused environmental investment: Government investment and corporate investment.

Government investment Government investment will focus on such areas as the construction of environmental infrastructure, integrated control of key watersheds, nuclear and radiation safety, rural pollution treatment, the development of nature reserves and key eco function areas, and building of environmental supervision capacity. The investment will be dominated by local government at all levels with the support of the central government according to situation.

Corporate investment Enterprises will be responsible for the treatment of industrial pollution according to "polluter pays" principle. Among them, the investment for the control of existing pollution sources will employ self capital of the enterprise or bank loan. Environmental protection investment of new, expansion or reform projects should be mainstreamed into development investment plan. With active adoption of market mechanism and absorption of social investment, a diversified input situation will be developed. It is expected that a total of 75 billion yuan pollution emission fee will be collected during the "11th Five-Year Plan" period, which will be used for pollution control. With such approaches as subsidy or interest discount, the authority will attract banks in particular policy banks to actively support environmental protection projects

Even though there are many opportunities in China market, the market is also difficult to approach. Finnish companies should take into consideration the following points:

Legal Issues Although a series of policies, laws and regulations have been issued by central government, these cannot be regarded as constituting a complete or effective guiding framework. Despite recent efforts by central government, the sector does not have a clear or comprehensive legal framework. A clear, comprehensive legal framework requires substantial cooperation between all responsible bodies. However, cooperation is particularly challenging given China's complex division of roles and responsibilities. Many existing laws and regulations have been developed and issued by individual administrative bodies with no consideration given others, resulting in inconsistencies and conflicts. In addition, central government often fails to account for local government capacity and deliver government support where needed. For instance, although central government has clearly stated that local administrations are responsible for marketization directives, it is questionable whether they have the expertise to implement the policies at the local level. There are a number of conflicts between

existing laws, one of which involves the issue of guarantees. China does not have a consistent or coherent set of laws or guidance concerning the type and extent of guarantees that can be offered. Current law, regulations, and circulars give contradictory statements regarding this issue. For example, public bodies are not allowed to offer or guarantee a fixed rate of financial return. In practice, however, it is recognized that many investments will be compromised if investors cannot obtain a certain minimum rate of return. As a result, a number of government directives discuss the appropriate rate of return on investment, suggesting rates based on long term bank lending rates or return on fixed assets. Such directives conflict with previous policies, making the legal environment unclear to the private sector and creating uncertainty about the value of a government guarantee.

Financial issues: Price is the primary concern for most buyers. At the present level of economic development and environmental-conscience, funding for environment protection are often limited. In a project without foreign loans, the buyer usually sacrifices quality for price and purchases cheap domestic products. In order to gain a long term stand in China market, it is recommended that the companies should find local Chinese sub-suppliers in order to be competitive in price. Such solution has been used in many other business fields and proved to be feasible and fruitful.

Localization issues: Another very important point (It might be the most important point nowadays in practical level) is that the technology and equipment should be adapted to local conditions. There is a big difference in the waste quality between Finland and China. Special efforts have to be made in the process designing. Technology and level of automation have to be adjusted in consideration of price competitiveness.

Finally, it is good to note that China is the world leader in terms of number *CDM projects*. The Government has proactive policy towards CDM. The potential to reduce GHGs is enormous, mainly due to vast coal based electricity generation: It is estimated that USD 5 billion can be generated from CDM projects by 2012. Finnish organizations should also utilize CDM for the projects conducted in China.

10 CONCLUSIONS

China is at the moment one of the fastest growing countries in the world. The economic growth has been above 7 % for many years. During the past 30 years the growth has accelerated further and last year it was close to 10 %. This growth is also about to continue in coming years.

It goes without saying that China is today facing the dilemma of combining fast economic growth with sustainable development and environmental conservation. The process of economic growth has been exerting increasing pressure on the ecological carrying capacity of the country. There are alarming signs for the poor state of the environment in many areas. The air quality in the major cities is poor; cities are drowning in waste; toxic pollutant level in several cities generally exceeds the proposed guideline value; ground water quality problem is a serious concern in many critically polluted and urban areas; water quality standard is exceeded in several river stretches, and the list goes on.

SEPA has upgraded to MEP in 2008 to be the authority of national level in charge of environmental protection. And NDRC is the authority of national level in charge of investment projects. Both SEPA and NDRC report to State Council.

China has preliminarily set up its environmental protection system, although not very completed. Law of the People's Republic of China on Environmental Protection is the basic law on environmental protection. Law of the People's Republic of China on Environmental Impact Assessment is the guiding regulation on prevention and control of pollutions of the construction projects from the designing stage to the daily operation stage. Besides these laws, China has disseminated laws of prevention and control on air pollution, wastewater pollution, solid waste pollution, noise pollution, radioactive pollution, etc. China will draft Law of National Environmental Protection Policy during the 11th FYP period. This law will be the utmost basic law of China environmental protection legislation system.

Meanwhile, China has also disseminated standards for prevention and control of various pollutants. Most of the standards are generally applied for many various industries, because many industries in China have not their own standards for pollutant emission. Of course, some industries have their own standards for pollutant emission. Under such conditions, enterprises of the industry follow the industry standards instead of the standards for general industries.

In the future, new projects will apply the new standards directly, while the existing projects are expected to be granted with certain transition period to comply with the new standards. Definition differences of new project and existing projects depend on whether the project has obtained approved EIA report or not.

During 11th FYP period, China plans to draft new regulations and standards, and to revise some of existing regulations and standards.

China takes the EIA system on preventing and controlling pollutions on the construction projects. From the project proposal stage, through designing stage and construction stage, till the daily operation stage, EIA should be taken into consideration. And the measures to prevent or mitigate the negative environmental impact recommended in the approved EIA report should be strictly followed. Especially, environmental protection measures and facilities should be taken and established from design stage and construction stage, till daily operation stage simultaneously with the progress of the main body of the construction project. That is called "Three-Simultaneous" policy. Without approved EIA report, financial institutions will not loan money to the construction entity. However, Equator Principle is not applied in China.

In the past years, China has been pursuing GDP growth with relatively less emphasis on environmental protection. And the implementation of the environmental protection regulations and standards was not strict. However, China has realized the importance of environmental protection for country development. Hence the regulations and standards are being implemented more and more strictly. With cooperation with some other central government departments, SEPA launched "Environmental Protection Campaign" early in January of 2007. 82 projects with value of Rmb112.3 billion (approx Euro11.23 billion) were called down. Furthermore, regions where there are too many projects seriously breaking environmental protection regulations were ordered to stop approving, examining, or registering investment projects before the environmental protection problems were solved.
The first thing to do for Chinese government is to improve the enforcement mechanism. The changes in the legislation will only bring about the opportunities for Finnish companies when the implementation is done properly. China Government has realized the problem of implementation, and is trying to improve to enforcement system of the rules. New rules are also introduced regularly.
China is a huge country, and then opportunities exist basically in all the fields of the environmental protection. Following are the areas which are of interest:

- ✓ Water pollution treatment
- ✓ Air pollution control
- ✓ Solid waste treatment
- ✓ Nuclear safety and treatment of radioactive waste
- ✓ Rural pollution control and ecological conservation
- ✓ Capacity building

Finland, as the least corrupted country in the world with functioning institutions and an overall trust in those, could also provide China organizations with an institutional strengthening and training.
Finally, it is to be stated that apart from the opportunities arising from the changes in legislations and improved implementation, many opportunities for Finnish companies and technologies in China lie with the companies that are willing to meet the international environmental quality standards.