

## Step-Based Guide for Implementation of Standards of Environmental Protection Industry

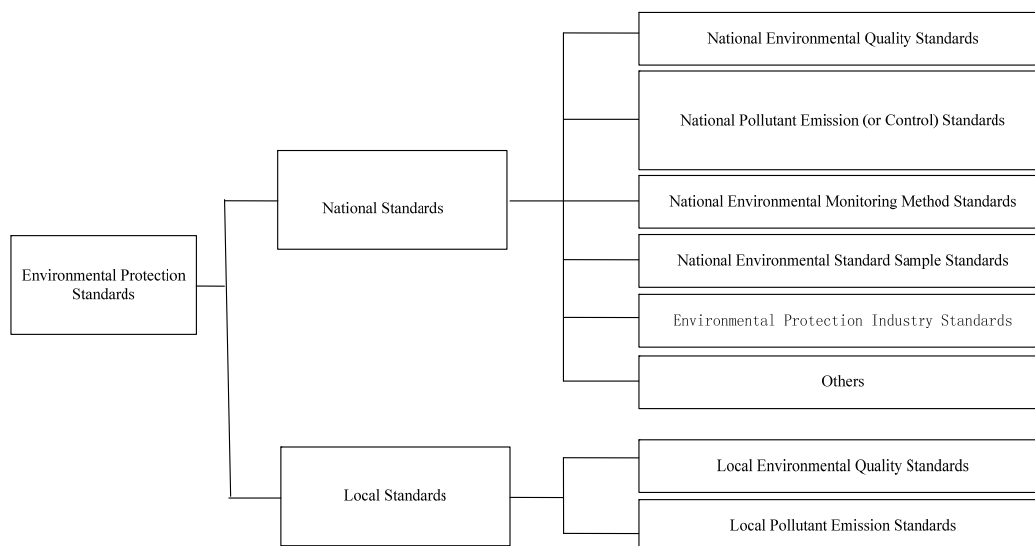
(First Draft) Oct 26, 2008

### 1 System and Policies of Environmental Protection Standards of China

#### 1.1 Legal Ground for Development of Environmental Protection Standards

Environmental protection standards are the rules developed for technical attributes of various matters that need standardization in environmental protection fields. China has established a national environmental protection standard system through environmental protection legislation. *Environmental Protection Law of the People's Republic of China, 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 Prevention and Control of Water Pollution, Law of the People's Republic of China on Prevention and Control of Environmental Noise Pollution, Marine Environment Protection Law of the People's Republic of China, and Radioactive Pollution Prevention and Control Law*, make rules for the development of environmental protection standards.

#### 1.2 Classification of Environmental Protection Standards



China's environmental protection standards include two levels, namely national standards (with their codes beginning with GB or GB/T and HJ or HJ/T) and local (provincial) standards (with their codes beginning with DB). National environmental protection standards include national environmental quality standards, national pollutant emission (control) standards, national standards for environmental monitoring methods, national environmental standard sample standards, environmental protection industry standards and other national environmental protection standards for all aspects of environmental protection law enforcement and management. Local environmental protection standards include local environmental quality standards and local

pollutant emission standards. The Figure 1 has shown the basic framework of the system of environmental standards.

Fig. 1 Framework of the System of Environmental Protection Standards of China

The detailed descriptions for various environmental protection standards are given in Articles 1.2.1-1.2.6 below.

### **1.2.1 National Environmental Quality Standards**

National environmental quality standards are the restrictive rules for harmful materials and factors in environment that are aimed at protecting human health, ecological environment and social material wealth and having a certain safety margin left. They are the standards measuring environmental quality within a certain period. In a sense, they are environmental quality target standards, to reach whose targets a series of national pollutant emission (control) standards will be developed.

At present, China mainly has environmental quality standards regarding four aspects: water environmental quality standards (including 5 standards), atmospheric environmental quality standards (including 3 standards), acoustic environmental quality standards (including 3 standards) and soil environmental quality standards (including 5 standards). Please refer to *Annex 1 Directory of Existing Environmental Protection Standards* for names of standards.

### **1.2.2 National Pollutant Emission (Control) Standards**

National pollutant emission (control) standards are the standards controlling a variety of environmental pollutant emission activities, namely pollutant source control standards, involving all industries. Being developed legally and with mandatory legal force, national pollutant emission standards are one of core contents of the national system of environmental protection technical regulations and standards, reflecting the national guidelines, policies and planning on environmental protection. They are important methods to optimize economic growth through environmental protection, to control the pollutant emission activities of environmental pollution sources and to carry out environmental access and exit. Their implementation will play an important role in the promotion of industry structure adjustment and technical improvement. In accordance with *Environmental Protection Law of the People's Republic of China*, the Ministry of Environmental Protection of the People's Republic of China will develop national pollutant emission standards based on national environmental quality standards and economic and technological conditions.

There are many types of national pollutant emission (control) standards. Generally speaking, the following two ways are carried out for further classification.

#### **(1) Classification By Ambient Medium**

National pollutant emission standards include water pollutant emission standards, air pollutant emission standards, noise emission standards, solid waste pollution control standards, and radioactive and electromagnetic radiation pollution control standards. (See Fig. 2)

The pollution control requirements for water pollutant, air pollutant, noise and solid waste emission have their own applicable laws. In principle, an emission standard shall be developed for each of them respectively, namely water pollutant emission standard, air pollutant emission

standard, noise emission standard, and solid waste pollution control standard.

When the pollutants an industry has emitted have a transfer possibility between water and air media, the emission control requirements of the industry can be incorporated into an emission standard.

The emission control requirements for the water and air pollutants that are produced during the treatment process of solid waste belong to the category of emission standard, but can be incorporated into solid waste pollution control standard.

**(2) Classification By Industry Type**

In addition, based on applicable industry scope, emission standards can be classified into the industry-based and the integrated pollutant emission standards. An industry-based pollutant emission standard refers to such a standard for a special industry (such as steel, coal, pesticides, cement, chemical and electronic products), which is also known as an industry application pollutant emission standard. An integrated pollutant emission standard refers to the emission standard generally used for all the industries beyond the applicable scope of industry-based pollutant emission standard, which is also known as an industry general pollutant emission standard, such as the *Integrated Emission Standard of Air Pollutants* and the *Integrated Waste Water Discharge Standard*.

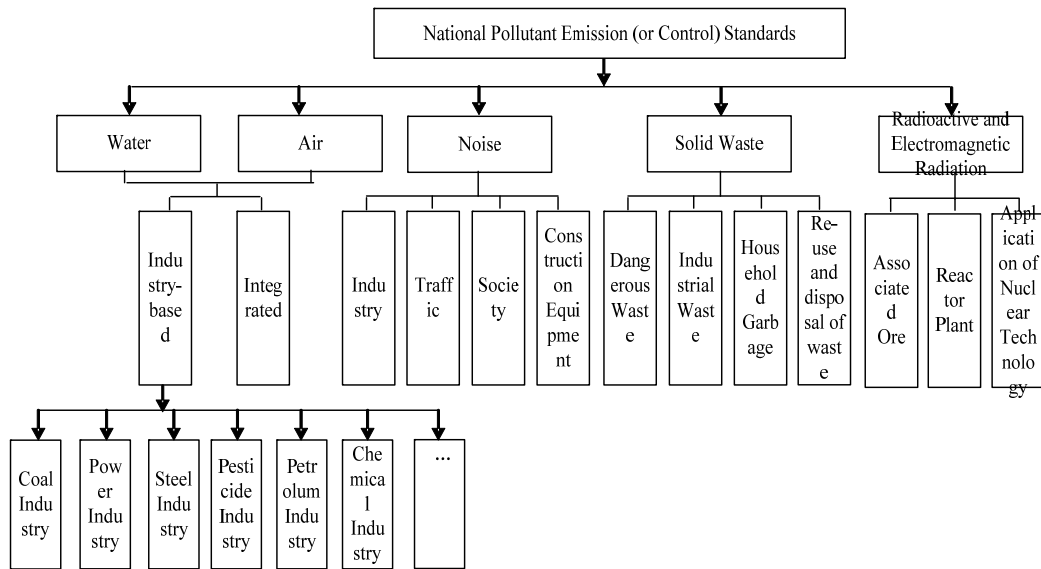


Fig. 2 Framework of the System of Pollutant Emission (or Control) Standards of China

To sum up the contents mentioned above, the system of pollutant emission (control) standards of China is shown in Figure 2. Please refer to *Annex 1 Directory of Existing Environmental Protection Standards* for names of all the existing pollutant emission standards.

**1.2.3 National environmental monitoring method standards**

They are the standardized rules for environmental quality and pollutant emission monitoring, sampling standardization, sample handling, analysis and testing, and data processing, namely for analysis, measurement, sampling, experiment and testing methods. The most common environmental monitoring methods are analysis, measurement and sampling methods.

Standards for environmental monitoring methods include national standards (with their codes beginning with GB or GB/T) and also environmental protection industry standards (with their codes beginning with HJ or HJ/T). Please refer to *Annex 1 Directory of Existing Environmental Protection Standards* for names of all the existing standards for environmental monitoring methods.

#### **1.2.4 National Environmental Standard Sample Standards**

Environmental standard sample standards are material standards using standard materials that are developed for the materials and material samples used for transmission of measurement values or quality control, with a dedication to ensuring the correctness and reliability of environmental monitoring data. Such samples are used for screening in environmental management, evaluating analysis equipment and their sensitivities; and evaluating the technique analyzer is using to standardize his operational technique.

#### **1.2.5 Local Environmental Protection Standards**

In accordance with the articles 9-10 of Environmental Protection Law of the People's Republic of China, the governments of provinces, autonomous regions and provincial cities shall develop local environmental quality standards and pollutant emission standards for the items that national environmental quality standards and pollutant emission standards do not include, as well as can develop the local pollutant emission standards more severe than national ones for the items that are included in national pollutant emission standards. Local environmental quality standards and pollutant emission standards must be submitted to the environmental protection administrative department of the State Council for being filed. And, pollutant emission activities to the areas with local pollutant emission standards shall be carried out based on those standards.

As of Oct, 2008, there are 37 local environmental protection standards that are filed by the Ministry of Environmental Protection and effective. Please refer to Annex 2 Filing Information of Local Environmental Protection Standards for the list of local standards.

#### **1.2.6 Environmental Protection Industry Standards**

Environmental protection industry standards are developed for the technical requirements that need standardization during environmental protection work. For example, the technical requirements, specifications or guidelines for the implementation of environmental management systems, testing technologies, environmental zoning and planning are environmental protection industry standards. Developed and issued by the Ministry of Environmental Protection, environmental protection industry standards have their codes beginning with HJ or HJ/T and are implemented nationwide, so such standards are also national environmental protection standards. Please refer to *Annex 1 Directory of Existing Environmental Protection Standards* for names of all the existing environmental protection industry standards.

In the National Eleventh Five-Year Planning for Environmental Protection Standards (Issued by MOEP [2006] No. 20), the main categories of national environmental protection industry standards are shown in Table 1.

**Table 1 Main Categories of National Environmental Protection Industry Standards**

1. Standards for supervision and management of construction projects	9. Technical Specifications of Environmental Protection Projects
2. Standards for Cyclic Economy and Ecological Industry	10. Standards for Environmental Monitoring Instrument and Equipment
3. Standards of Review of Clean Production	11. Technical Specifications for Total Volume Control and Accounting of Pollutant Emission
4. Standards for Protection of Ecological Environment	12. Specifications for Management of Environmental Protection Archives
5. Monitoring Methods of Environmental Pollutants	13. Environmental Protection Information Standards
6. Environmental Monitoring Technical Specifications	14. Specifications for Development and Revision of Environmental Protection Standards
7. Standards for Environmentally-Labeled Products	15. Standards and Technical Specifications Relating to Nuclear and Electromagnetic Radiation
8. Standards for Environmental Protection Products	16. Other Environmental Protection Standards and Specifications

### 1.3 Departments Responsible for Environmental Protection Standards

The Ministry of Environmental Protection of the People's Republic of China (hereinafter referred to as the "Ministry of Environmental Protection" or the "MOEP") is the department in charge of environmental protection standards. In accordance with relevant laws such as *Environmental Protection Law of the People's Republic of China*, national and local environmental protection standards are developed by the Environmental Protection Department of the State Council (Department of Environmental Protection) and local provincial governments respectively.

The national standards for environmental quality, pollutant emission (control), environmental monitoring methods and environmental standard samples, among others, generally speaking, are issued jointly by the MOEP (previously called the "State Environmental Protection Administration") and the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China. Environmental protection industry standards are issued by the Ministry of Environmental Protection, while local ones are issued by local provincial governments.

National environmental protection standards are enforced throughout the state, and local environmental standards are enforced in the provinces, autonomous regions and provincial cities, where those standards are issued.

### 1.4 Legal Effect of Environmental Standards

Environmental protection standards are classified into mandatory standards (with their codes beginning with HJ or GB) and recommended standards (with their codes beginning with GB/T or HJ/T). Mandatory environmental protection standards must be enforced, with emission exceeding the standards being a violation of law. Recommended environmental protection standards are

voluntary standards, whose enforcement is not enforced. The state encourages the use of recommended environmental protection standards. However, once a recommended environmental protection standard is adopted by a mandatory standard, it must also be enforced.

### **1.5 Relationship between Environmental Protection Standards and Environmental Policies**

Environmental protection standards are the main grounds for assessment and evaluation of environmental quality, development of environmental plans and environmental monitoring. As an important tool, they can improve environmental quality, control pollutant emission activities, check environmental performance of products, promote development of environmental protection technologies and enhance environmental monitoring. The system of environmental standards can offer technical support for scientific and highly effective environmental management and service, as well as is the important technical basis for the enforcement of environmental protection policies, laws and regulations.

Among all environmental protection standards, national pollutant emission standards are one of core contents of the system of national environmental protection technical laws and standards, reflecting the national guidelines, policies and planning on environmental protection. They are important methods to optimize economic growth through environmental protection, to control the pollutant emission activities of environmental pollution sources and to carry out environmental access and exit. Their implementation plays an important role in the promotion of industry structure adjustment and technical improvement.

### **1.6 Relationship between Various Types of Environmental Standards**

**Relationship between national and local environmental protection standards:** In accordance with *Environmental Protection Law of the People's Republic of China*, local environmental standards are the supplement to or more severe rules of national environmental standards. The enforcement priority of local environmental protection standards is higher than that of national ones in the areas with local environmental protection standards.

**Relationship between national pollutant emission standards:** Currently, China has two kinds of pollutant emission standards, which are industry-based emission standards and integrated emission standards. These industry-based emission standards may be different from integrated ones in emission requirements of pollutants. Industry-based emission standards highlighting the pollution characteristics of an industry have more specific and reasonable indicator rules, which is more favorable for the control of pollutant emission of the industry. Therefore, when implementing emission standard, an industry-based emission standard of an industry must be enforced if there is one, so it is not necessary to carry out an integrated emission standard. If there is not such an industry-based emission standard, an integrated emission standard must be enforced.

### **1.7 Development Plan of Environmental Standards**

There are 1,094 existing environmental protection standards varying in type in total in China as of September, 2009 (See *Annex 1 Directory of Existing Environmental Protection Standards*). Among them, there are 16 national environmental quality standards involving air, water, soil, noise and vibration. Totally, there are 106 national pollutant emission (control) standards including those for water pollutants, air pollutants, noise and solid waste pollutants. The types of national

environmental standard samples include water, air, soil and biological matter, among others, with the total number of 251. There are 684 national environmental protection industry standards and other national environmental protection standards in total, including nuclear radiation and electromagnetic radiation pollution control standards, standards for monitoring methods of environmental pollutants and harmful factors, environmental protection infrastructure standards, standards for supervision and management of construction projects, clean production standards, environmentally-labeled product standards and environmental protection product standards. There are 37 local environmental protection standards in total that are developed by Beijing, Shanghai, Shandong and other provinces.

Table 2 Quantities of Environmental Protection Standards of China (as of Sept., 2009)

<b>Standard Type</b>	<b>Quantity</b>
<b>National Environmental Quality Standards</b>	16
<b>National pollutant emission (control) standards</b> including those for water, air, noise and solid waste	106
<b>Categories of national environmental standard samples</b>	251*
<b>National environmental protection industry standards and other national environmental protection standards</b> including nuclear radiation and electromagnetic radiation pollution control standards, standards for monitoring methods of environmental pollutants and harmful factors, environmental protection infrastructure standards, standards for supervision and management of construction projects, clean production standards, environmentally-labeled product standards and environmental protection product standards	684
<b>Local environmental protection standards</b>	37
<b>Total:</b>	1,094

Note: The data with a sign of “\*” are the statistics data of December, 2005.

In accordance with the *National Eleventh Five-Year Planning for Environmental Protection Standards* which is issued by the State Environmental Protection Administration, China will initially establish a national system of environmental protection technical laws and regulations; further adjust and improve the system of environment protection standards; and complete the development and revision of more than 100 major national environmental protection technical laws and regulations and more than 1,000 national environmental protection standards in the “Eleventh Five-Year” period (2006-2010). Please refer to the *List of National Environmental Protection Standards to be Developed and Revised during the “Eleventh Five-Year” Period* for more information on the standards which will be studied and developed.

**The main tasks related to environmental protection standard to be done during the “Eleventh Five-Year” period are as follows:**

(1) To improve the system of national environmental quality standards; to establish a scientific and reasonable system of environmental quality assessment technical specifications; to revise the standards including *Surface Water Environment Quality Standard* and *Soil Environment Quality Standard*; and to develop *Soil Environment Quality Standard for Land for Construction*. The corresponding quality assessment technical specifications for newly-developed quality standards shall be developed.

(2) To enhance the development of industry-based pollutant emission standards; to complete the development and revision of pollutant emission standards for major industries such as steel, coal, thermal power, pesticide, non-ferrous metals, building materials, pharmaceutical, petrochemical, chemical, oil and gas, machinery, and textile printing and dyeing; and to increase the coverage of the industry emission standards while gradually narrowing the applicable scope of integrated pollutant emission standards. A comprehensive review and revision shall be conducted for the emission standards with a long-term enforcement period, improving their emission control levels. During the development and revision of emission standards, the system of national emission standards shall be adjusted and improved to address the problems that the applicable scopes of standards overlap or there are some fields not covered by the applicable scopes. The standardization level of the development and revision of emission standards shall be improved. The development and revision of pollutant emission standards shall meet the requirements of law-based administration and put the legislative spirit of the Administrative Permission Law into practice, standardizing the environmental protection management work of newly-built and existing pollution sources.

(3) The use of advanced monitoring technologies and foreign advanced standards shall be enhanced during the development and revision of standards for pollutant monitoring methods. Focusing on the water quality monitoring method standards of drinking water sources, the development and revision of standards for monitoring methods of and specifications for monitoring technologies of hazardous substances and factors of various environmental media and the research and production of environmental standard samples shall be carried out comprehensively. The emphasis shall be put on the study and development of monitoring methods for a variety of organic pollutants and persistent organic pollutants. The development shall be conducted for environmental monitoring technical specifications managing and controlling all the aspects and steps of environmental monitoring work and the improvement shall be made for the system of environmental monitoring technical specifications. The emphasis shall be put on the study and production of standard samples of organic pollutants in water and the quality improvement of water quality monitoring work of drinking water sources.

(4) The comprehensive development shall be implemented for technical specifications of environmental protection management and law enforcement. Technical specifications shall be developed for environmental impact assessment, ecological protection, total volume accounting and control of pollutant emission, environmental information and archives management, clean production review, construction management of environmental projects, the attestation of environmental signs and environmental protection products, the determination of healthy injuries

resulting from environmental pollution, cyclic economy and ecological industry.

(5) In accordance with requirements of the Filing Management Methods of Local Environmental Quality Standards and Pollutant Emission Standards, filing work shall be carried out for standards and the information on such filing shall be published, standardizing and promoting the development of the work relating to local environmental protection standards.

## **2 Environmental standards and market access**

### **2.1 Access of environmental standards**

Environmental standards formally issued in China until now are written in Chinese, and there is no version in English or other languages. See Appendix 1 for effective environmental standards issued by Sept., 2008.

State environmental standards are published by China Environmental Science Press (partially published by Standards Press of China before 1998).

Electronic files of national environmental quality standards, pollutants discharge (control) standards, standards of environmental monitoring methods and partial standards for environmental protection industry (in PDF format) are available on the following websites:

— <http://www.mep.gov.cn/tech/hjbz/bzwb/>

— <http://www.es.org.cn/cn/index.html>

### **2.2 The relationship between environmental standards and market access**

Generally, there are a series of requirements for access on markets and environmental standards are just part of them. As it is described in Section 1.4 “Legal Effect of Environmental Standards”, compulsive environmental standards must be executed, and any non-compliance should be determined as an illegal offence. Recommendatory environmental standards are voluntary, but when adopted as compulsive standards, they should be enforced.

At present, all the national or local pollutants discharge (control) standards and partial standards of environmental monitoring methods are compulsive, and related industries and units should comply with them.

Cleaner production standards, environmental standard samples, analytical method standards, International Standard ISO 14000 of Environment Management System, environmental protection product standards, environmental labeling product standards, technical guidelines for environmental protection projects, standards for environmental monitoring instrument and equipment are normally recommendatory.

### **3 Adaptation to international practices**

For now, some discharge standards in China have adopted overseas advanced technical regulations with modifications, such as American rules and regulations and EU directives. In addition, some standards of environmental monitoring methods adopt international standards. See more details in

### **Appendix 4 Statistics of Standard Adoption.**

China, as a full member of the WTO, will now adapt its environmental standards to international practices. The State Environmental Protection Administration of China pointed out in Opinion on

Reinforcement and Reform of Environmental Standards (Issued by SEPA, Huanfa No. 194, 2003) that China would apply more international equivalent standards through adoption or transformation according to the features and principles of environmental standards. When possible, international standards or standards of developed countries are adopted as national standard of environmental monitoring methods. It is also stated clearly in the 11<sup>th</sup> Five-Year Plan for State Environmental Standards that greater efforts should be devoted to the adoption of advanced monitoring techniques and overseas standards in revision of pollutants monitoring method standards.

At the same time, more studies about the environmental standards of important products worldwide, especially in developed countries and regions are made in China. Suitable environmental indicators for similar products are chosen by relevant departments to accelerate the development of technology.

Compulsive technical regulations such as pollutants discharge standards are established with reference to similar standards of developed countries, and those standards will be gradually raised according to China's national conditions to speed up industry restructuring and technological progress.

There are three ways to adopt international standards, identical adoption, modified adoption and non-equivalent adoption.

#### **4 Acquisition of information about upcoming environmental standards and standard setting procedures**

##### **4.1 Setting procedures of environmental standards**

According to Measures on Administration of Establishment and Revision of State Environmental Standards (Announcement No. 41, 2006 of the State Environmental Protection Administration of China), establishment and revision of China's environmental standards is subject to the following procedures:

- a) Proposing draft of annual establishment and revision project plan, asking for opinions and making relevant modification; making special demonstration if necessary; finalizing the plan.
- b) Assign the annual plan to each project undertaking entity.
- c) Setting up a standard compiling group to perform investigation, consultation and compilation of project introduction.
- d) Performing project demonstration, and determining techniques and work programs.
- e) Carrying out essential confirmatory experiments; compiling the draft standard for comments and explanation of compilation.
- f) Publishing the draft for comments and asking for comments from the public and relevant units.
- g) Summarizing the comments and compiling the draft standard for examination and explanation of compilation.
- h) Performing technical and format review for the draft standard.
- i) Compiling the draft standard for approval and explanation of compilation, submitting application materials.
- j) Carrying out administrative examination for the standard.

k) Approving (registration number) and issuing the standard.

l) Publishing the official text of the standard.

#### **4.2 Ways of acquiring information about upcoming environmental standards**

Five-year plans, annual plans for establishment and revision of environmental standards (such as the 11<sup>th</sup> Five-Year Plan for State Environmental Standards), draft standards for comments and explanation of compilation can be viewed and downloaded on <http://www.mep.gov.cn/tech/hjbz/bzwb/> and <http://www.es.org.cn/cn/index.html>. Meanwhile, WTO/TBT notifications are given during the formulation of compulsive environmental standards which will exert an influence on international trade. Foreign enterprises and individuals can acquire relevant information about standards in China by this way.

Environmental standards are brought forward and put under centralized management by the Department of Science, Technology and Standards of the Ministry of Environmental Protection. The concrete work is performed by the Environmental Standards Branch. Any enterprise or individual can contact the department in charge by mail, telephone, fax when having any question or opinion about the environmental standards.

Ways to contact the Department of Science, Technology and Standards of the Ministry of Environmental Protection:

Address: 115 Nanxiaojie, Xizhimen, Xicheng District, Beijing

Post code: 100035

Tel/fax: 66556205

#### **4.3 Ways of participating in establishment of environmental standards**

The Ministry of Environmental Protection encourages the public to participate in establishment of environmental standards. Formulation and publication procedures of each environmental standard can be determined according to its characteristics and transparency of standard establishment will be increased. Work that the public can be engaged in is as follows.

##### **4.3.1 Participation in formulating the establishment and revision project plan**

Any entity and individual can make suggestions to the Ministry of Environmental Protection about a standard establishment project in writing. The ministry will give full consideration to them when compiling the annual project plan.

Besides, the draft of the establishment and revision project plan will be issued on the website of the Ministry of Environmental Protection for opinions from the whole society. After summarizing the opinions, the ministry will modify the project plan and issue a final version (the annual plan) which is also available on the website of the Ministry of Environmental Protection.

Such information is commonly released on the column of Standard Administration (the home page of the Ministry of Environmental Protection->Science, Technology and Standards->Environmental Standard-> Standard Administration).

##### **4.3.2 Participation in the establishment and revision project**

There are two ways to participate in the work of establishing and revising environmental standards:

One is direct participation in project studies and establishment and revision of standards. The

Ministry of Environmental Protection welcomes research institutes and representative and competent enterprises to involve in the drafting work. Each enterprise can apply to the Ministry of Environmental Protection for undertaking part of the project. Enterprises responsible for establishment of national environmental standards are normally chosen by open solicitation and assignment.

The other is indirect participation in establishment and revision of standards, such as offering opinions and suggestions for the draft. Comments from related departments, research institutes, enterprises and individuals will be considered when the environmental standards are established and revised. The Ministry of Environmental Protection will send draft standards to relevant departments and organizations for opinions and release them on the website of the Ministry of Environmental Protection (see the column of Opinion Solicitation). The draft standards and explanation of compilation will be available to all on the website of the Ministry of Environmental Protection and everyone can give his advice to the General Administrative Office and Department of Science, Technology and Standards of the Ministry of Environmental Protection. WTO/TBT notifications are given for comments of WTO members during the formulation of compulsive environmental standards which will influence international trade.

The draft standards will be modified according to the opinions and suggestions and draft standards for examination will be completed. Then the Ministry of Environmental Protection will invite experts in related industries to carry out technical reviews for the draft standards and obtain more ideas to perfect the standards.

## References

- 1、 Measures on Administration of Environmental Standards (Order No. 3, 1999 of the State Environmental Protection Administration of China)
- 2、 Announcement of Instruction Opinion on Enforcing Establishment and Revision of State Pollutants Discharge Standards (Announcement No. 17, 2007 of the State Environmental Protection Administration of China)
- 3、 Summary Of Environmental Standards in China (03/10/2008)
- 4、 Notice on Issuing the 11<sup>th</sup> Five-Year Plan for State Environmental Standards (Issued by SEPA, Huanfa No. 20, 2006)
- 5、 Announcement of Measures on Administration of Establishment and Revision of State Environmental Standards (Announcement No. 41, 2006 of the State Environmental Protection Administration of China)