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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

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Final Report

(This report covers the work of CNCPC from 1995 to 1998)

CHINA
NATIONAL CLEANER PRODUCTION CENTER

DECEMBER 1998

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FOR THE FINAL REPORT

FINAL REPORT
BY
CHINA NATIONAL CLEANER PRODUCTION CENTER

DECEMBER 1998

(This report covers the work of CNCPC from 1995 to 1998)

With the support and guidance of UNIDO essentially, China NCPC plays an important role on promoting CP in China. Through its successful operation and activities, the concept of CP has been understood and accepted by administrative bodies of China's industries and the central and local governments. The China National Network for Cleaner Production was established in 1996 and China NCPC acts as the secretariat responsible for operating and managing the day-to-day tasks. China NCPC has completed CP audit in some 100 enterprises in more than 10 subsectors. More than 10 subcenters for CP have been established in various provinces, cities and industrial sectors; several thousands of people have received CP training in various ways. China NCPC has developed 7 manuals, guidelines or training kits of China. And with the effort of China NCPC, the State Environmental Protection Administration of China (SEPA, the former National Environmental Protection Agency) has issued a policy command entitled "Several Regulations on Promoting Cleaner Production" and is planning to formulate the implementation plan for it.

According to the contract signed between UNIDO and CNCPC, reports on activities related to cleaner production performed by CNCPC should be submitted to UNIDO quarterly and by the end of 1998 overall 12 issues of quarterly progress report have been completed and accepted by the headquarter of UNIDO.

I. INSTITUTIONAL BUILDING

With 15 professionals working full-time on cleaner production activities, CNCPC has become the single largest cleaner production center in developing countries. The 14 staff are all high educated with 2 in Ph.D. degrees, 8 in Master degrees and 5 in Bachelor degrees.

Currently there are five divisions within CNCPC including

- Division of Cleaner Production Promotion
- Division of Environmental Management System Consulting
- Division of Research and Development which aims at research on CP tools like LCA, ecodesign, etc.
- Division of Public Relations and
- Division of Information Dissemination.

II. PUBLICITY AND TRAINING

1. Cleaner Production Newsletters

During the last 3 years, CNCPC has edited and published 19 issues of Cleaner Production Newsletter, which is the first specific publication on CP in China. As the

publication of the National Network for Cleaner Production, the newsletters not only disseminate a great of international and domestic information on CP nation wide promptly, but also provide an effective media for the member units of the network to exchange their experiences on CP with other interesting institutions all over China.

2. Training Materials

By the end of 1998, China NCPC has developed many documents to summarize and disseminate China's experience in CP, including

- Manual for Cleaner Production Audit at Enterprises
- Training Kit on CP Audit Manual for Enterprises
- An Introduction to CP Audit for Enterprises
- An Outline to CP
- Cleaner Production: A Model to Reach Industrial Sustainable Development
- Guideline for CP Audit in Brewery Industry
- Guideline for CP Audit in Electroplating Industry
- Guideline for CP Audit in Organic Chemical Raw Material Industry
- Guideline for CP Audit in Silk Dyeing and Printing Industry
- Guideline for CP Audit in Pulp and Paper Industry
- Cleaner Production In China and
- Symposium on Cleaner Production.

More than 6,000 copies of the Manual for Cleaner Production Audit at Enterprises and Training Material on CP Audit Manual for Enterprises are sold.

3. Training

Since the end of 1995, China NCPC has conducted more than 45 domestic training workshops on CP. More than 8,000 persons received the CP training. The training is offered in different levels according to needs of participants:

- CP awareness raising
- external CP auditor training
- internal CP auditor training and
- floor worker training
- Foundation Course for CP Auditors, etc.

China NCPC also organized 3 international training respectively for

- SEPAI delegation
- senior officers of Morocco Industry and Trade Ministry and
- Vietnam delegation composed of 14 officials from 2 provinces of Vietnam.

Purpose of the Foundation Course for CP Auditors is to provide participants with a very detailed and step by step training on how to conduct a CP audit at an enterprise. The course is five days long with an on-the-site training at an enterprise and an examination. Participants who passed the examination and evaluation for active participation in the course are conferred a certificate by the China NCPC. China NCPC held 3 training

workshops to offer the Foundation Course for CP Auditors and 60 trainees received the formal training course and obtained their certificate of the training.
In addition, the center gave lectures on integration of CP and environmental impact assessment (EIA) in 12 training workshops held by the State Environmental Protection Administration (SEPA) all over China, including Beijing, Shanghai, Chongqing, Shanxi, Shandong, Gansu, Zhejiang, Jiangsu, Yunnan, Guangxi. More than 1000 people attended the workshops and got to know CP methodology and CP audit.

III. PROJECTS RELATED TO CLEANER PRODUCTION

In the past several years, much has been done in the field of cleaner production in China. The cleaner production projects in China have been assisted by several other countries and international organizations in the world. The effective coordination and cooperation in the process of implementing cleaner production has got a great achievement in China. CNCPC has conducted CP audits in some 100 enterprises in more than 10 industrial subcectors, including:

- Electroplating industry
- Brewing industry
- White spirit making industry
- Pulp and paper industry
- Chemical industry
- Fertilizer industry
- Petrochemical industry
- Printing and dyeing industry
- Building materials making industry
- Steel and iron industry
- Textile industry
- Household appliances industry
- Casting industry
- Oil refining industry
- Pharmaceutical industry

1. Promoting Cleaner Production in China (Subproject B-4)

This is China's very first cleaner production project. In order to help the State Environmental Protection Administration (SEPA) of China introduce modern models for environmental management from developed countries, the World Bank offered to provide SEPA with credits on implementing Environmental Technical Assistance Project (ETAP) in China in April 1992. Subproject B-4, Promoting Cleaner Production in China, is a major component of the ETAP. Its goal is to develop and expand China's cleaner production expertise.

Subproject B-4 consists of four subcomponents that were implemented from 1993 to 1996, i.e. the preparation phase, demonstration phase, policy study phase and dissemination phase. In addition to actively take part in the policy study phase CNCPC undertook the preparation phase, the demonstration phase and the dissemination phase.

The preparation phase translated cleaner production audit manuals and related documents from developed countries into Chinese, and tested it in 11 companies. At the end of the preparation phase, national seminars were convened by CNCPC to invite experts from different sectors and areas to discuss establishment of Chinese approach of cleaner production. CNCPC finally published its own "Cleaner Production Audit Manual for Enterprises ". Using the audit manual developed in the preparation phase as a standard technical guideline, the demonstration phase carried out another 18 audits. Because of the significant environmental and economic benefits gained during the preparation phase two of the companies that participated in the preparation phase carried out their second audit in the demonstration phase. The dissemination phase studied the success factors and lessons learned from the demonstration phase and compiled a Training Kit explaining detailed techniques for each step of the audit procedures specified in the audit manual generated in the demonstration phase. CNCPC also compiled during the dissemination phase technical guidelines for four industrial sectors: processing of chemical raw materials, printing and dyeing for silks, electroplating and brewing industry. Training workshops at national, provincial and municipal levels were held using the Training Kit and technical guidelines. Program for CNCPC and Subproject B-4 were made and played at radio stations and TV centers. An international conference was held to summarize and disseminate the results of Subproject B-4.

Subproject B-4 has achieved the following goals:

(1) Fostered the first group cleaner production experts in China (they are now still the kernel of today's Chinese cleaner production expertise):
(2) Developed and tested a Chinese methodology for implementing cleaner production by pollution prevention (the methodology generated by Subproject B-4 is now being used as a standard procedure in China nationwide);
(3) Developed and tested Chinese training material based on this methodology and trained Chinese trainers for demonstration projects(more than 1,000 participants attended cleaner production training in Subproject B-4);
(4) Demonstrated environmental and economic benefits a Chinese enterprise can gain through a cleaner production audit (the project identified 396 non/low cost options which reduced 20% pollutants of the participating companies and generated 2.7 million USD return annually, with a total investment of 27,000 USD);
(5) Identified, analyzed and largely overcame the obstacles in governmental policies to cleaner production;
(6) Formulated recommendations for effective policies to implement cleaner production;
(7) Disseminated the B-4 project results among political governmental and industrial high-level authorities and / or organizations.

2. Cleaner Production Demonstration for Pulp and Paper Industry in China

This project is hosted jointly by the State Environmental Protection Administration (SEPA) and the Light Industry Association (LIA) of China. China National Cleaner Production Center (CNCPC) provides major technical support and part of funds. Other implementing organizations include the Environmental Science Institute of Light Industry (ESILI) and Beijing College of Light Industry (BCLI). This project is also supported strongly by environmental protection bureaus, light industry

associations and other governmental bodies at provincial and municipal level. In addition to the funds provided by CNCPC, a major component of the project funds is provided by UNEP NIEM (Network for Industry and Environment Management).

The project was implemented in two rounds with 15 pulp and paper mills participated in. In the first round (1995.08-1996.04), 6 mills located nationwide were selected to conduct cleaner production audit; and in the second round (1996.04-1997.04), 9 mills in the Huaihe Basin which is seriously polluted were selected. Encouraged by the success achieved in the first 2 rounds the project started its extension phase, which is now being implemented in 12 pulp and paper mills in the Haihe Basin. During the demonstration of this project, the cleaner production audits completely followed the audit procedure specified in the Cleaner Production Audit Manual for Enterprise compiled by CNCPC.

The major achievements gained from this project include:

(1) Fostered a group of cleaner production experts for pulp and paper industry in China;
(2) Established a cleaner production audit procedure particularly fitting the straw-based pulp and paper mills in China(according to the characteristics of China's pulp and paper mills, CNCPC, ESILI and BCLI compiled jointly the Technical Guideline for Cleaner Production Audit in Pulp and Paper Industry, which has been distributed in China's pulp and paper industry widely);
(3) Proved that the straw-based pulp and paper mills in China can gain sound environmental and economic benefits through cleaner production audit (according to an incomplete statistics, 15 mills generated an overall 492 cleaner production options, among which 308 options were implemented before the end of this project and most of them were non/low cost CP options. The wastewater was reduced by 11,380,000 tons/a and COD was reduced by 260,000 tons/a. The economic benefit gained from non/low cost options alone reached 6,300,000 USD per year and the total investment of all mills was just 660,000 USD.)
(4) Identified cleaner production options in main technical process of the pulp and paper industry, including preparation of raw material, extraction of black liquor, alkali recovery, and recycling and reusing of water.

3. Cleaner Production Training Project in Shandong Province

To ensure the effective management of the Xiaoqing River Basin Pollution Prevention and Control Revolving Fund (5 million USD) provided by the World Bank, there need a training for the Cleaner Production (CP) auditors, CP related government officials and financial staff of Shandong Provincial Environmental Prevention Bureau (SPEPB), who are all involved in the management of the fund operation procedures. The training workshops have been held in the second week of March, third week of April, and second week of July in 1997 respectively.

4. Cleaner Production Demonstration in Brewing Industries

China NCPC has completed CP audit demonstration for brewing industry in two rounds from 1995 to 1996. Totally 5 breweries have conducted CP audit during the demonstration.

5. CP Demonstration and Training in Benxi City, Liaoning Province

From the end of 1997, CNCPC, as a subcontractor, started the project of Capacity Building for Widespread Adoption of Cleaner Production for Air Pollution Control in Benxi. During the implementation of this project, CP demonstration will be conducted in overall 15 enterprises in Benxi and at present 4 demonstrative enterprises completed their CP audits with guidance of CNCPC's experts.

6. Review on the CP Demonstration in Pulp and Paper Industry of China

Since the early year of 1998, CNCPC started to review on the demonstration of promoting cleaner production in pulp and paper industry of China. This activity aims at investigate CP sustainability in the 15 demonstrative pulp and paper mills of China; evaluating the effectiveness of CP audits in the 15 demonstrative pulp and paper mills in China; and evaluating the opportunity of implementing CP in pulp and paper industry of China. This project is anticipated to complete by March of 1998.

7. The Second Round CP Demonstration in Pulp and Paper Industry in Haihe River Basin

After the CP demonstration conducted in 15 pulp and paper mills, there started another round of demonstration in 12 pulp and paper mills in Haihe River Basin, another seriously polluted area of China. While demonstrating CP audits in these mills, local CP auditors will be also trained, who will be anticipated to serve as "trainers" in further CP audits in this basin.

8. Southwest Poverty Reduction Project in China

The Southwest Poverty Reduction Project (SWPRP) in China funded by a loan from the World Bank is a project of comprehensive exploitation and development in poverty-stricken mountain areas in the Guangxi Autonomous Region, Guizhou Province and Yunnan Province in China from July 1995 to June 1998.

The subproject of implementing cleaner production in township and village enterprises (TVEs) under SWPRP aims at raising the level of sustainable development awareness for decision makers and general public so as to achieve environmental protection and rational utilization of resources while pursuing economic development. This subproject also aims at establishing a series of cleaner production demonstrative projects, which will conduct poverty reduction projects in future.

9. China - Canada Cooperation Project on Cleaner Production

Policy and Management for Cleaner Production in China, collaborated by SEPA, State Economy & Trade Committee of China and Canadian government, is one of the three subprojects titled Bilateral Cooperation for China Agenda 21 signed by two governments in July 1994.

The purpose of the project is to assist China in implementing cleaner production in priority industrial sectors consistent with China's Priority Program for Agenda 21.

strengthening the institutional capacity of the State Economic & Trade Commission (SETC) and the State Environmental Protection Administration (SEPA, the former SEPA) to promote cleaner production in priority industrial sectors in China, supporting government institution, industries and enterprises in the application of cleaner production in priority sectors, and fostering the cooperation between China and Canada. The project-implementing period is from January 1997 to December 2000.

10. China - Norway Cooperation Project on Cleaner Production

The project is organized by the State Sciences and Technology Commission of China and the Norway Cooperation development Program and is undertaken by the Beijing Environment Protection Bureau (Beijing EPB) and the Norway Engineer Association. Its objectives are to develop Chinese expertise on cleaner production and set up demonstration enterprises for cleaner production in selected industrial sectors. The implementing period is from December 1994 to September 1995.

11. China - USA Cooperation Project on Cleaner Production

Pollution prevention technologies are diffused through technology outreach, assessments, demonstrations and evaluations for metal finishing, petrochemical, and pharmaceutical industries in China. The project is collaborated by CNCPC, SEPA and Illinois EPA of US . Six participating enterprises from 3 sectors mentioned above carried out CP audits. Identification of demonstrating technology, study on policy of economic incentive for CP, market investigation for CP technology in the three sectors are also the research fields of the project.

12. Sino - Dutch Cooperation on Cleaner Production

On June 1996, a Sino-Dutch Seminar on Energy and Environment was held in Beijing. Its objective was to assist China in finding routes to and efficient energy system with relatively low emissions with emphasis on technologies and expertise which may be of interest to China and which the Netherlands can support, the target groups being energy companies, the (oil and) natural gas sector, local, provincial and national governments, building trade, energy and environmental research organizations. Technologies and expertise both in China and the Netherlands gave presentations.

13. China-Australia Cooperation on Cleaner Production

To strengthen the cooperation between China and Australia in cleaner production, a workshop was held in Beijing on June 20-21, 1996. Its objectives were introducing Australian education and training programs in cleaner production and finding opportunities for further collaboration between China and Australia. It was hosted by SEPA of China and the Australian Environment Protection Agency (AEPA)and the Chinese Environment Sciences Society and the China National Cleaner Production Center (CNCPC).

14. China - Asia Development Bank Cooperation on Cleaner Production

The Asia Development Bank planed to establish Environmentally Sound Technology Transfer Center (ESTTC) in China. The project will be performed by The State Science and Technology Commission (SSTC).

15. Domestic CP project

- In addition to the above-mentioned projects, CNCPC also conducted CP audits in other domestic projects. Among them, one of the most important projects is the CP audit in Xiamen ABB Switchgear Co. Ltd., which is the first joint venture of ABB in China and obtained the ISO14000 Certificate in 1996.

- CNCPC is also devoted into policy advice and study on CP methodology. The project of Study on Integration of CP and Environmental Impact Assessment has been finished duly in July 1998.

IV. ACTIVITIES RELATED TO CLEANER PRODUCTION

1. Policy advice

With the great effort and contribution of CNCPC, the State Environmental Protection Administration (SEPA, the former National Environmental Protection Agency) published a governmental document in April 1997, named "Several Regulations on Promoting Cleaner Production" which is guiding CP activities in China.

In addition CNCPC also assisted SEPA with compiling "A Temporary Management Method for CP Audit" (Solicit Opinions Draft) to carry out the above mentioned documentation, therefore to enhance leveler of CP audit, and to standard the behavior of CP auditors. The document is attached as Appendix 1.

2. The Standards of Cleaner Production Enterprise

In 1998, CNCPC formulated the Standards of Cleaner Production Enterprise for China, which indicates the requirement for CP Enterprise. In general, the CP Enterprise should conduct CP audit, carry out whole-process pollution prevention strategy and be in keeping with basic environmental protection laws and regulations. In middle of 1998, Xiamen ABB Switchgear Co. Ltd. applied for the certificate of Cleaner Production Enterprise and passed the certification, therefore it becomes the first Cleaner Production Enterprise in China.

3. The China National Network for Cleaner Production

The China National Network for Cleaner Production was established at the end of 1996. The secretariat of the network is located in China NCPC. The staffs in the department of public relations and information-exchange, CNCPC, are responsible for the day-to-day tasks of the network. From 1997, the CP Newsletter edited by CNCPC has been regarded as the publication of the network, which provides the information exchange channel for each member of the network. CNCPC also announces the domestic and international materials of CP to the member units, so as to facilitate the member to keep abreast of the current development of CP inside and outside of China.

With the hard work and great effort of China NCPC, the network is being operated fluently and has had over 80 member units all over China. Its influence is increasing rapidly and the network has been well known and accepted in China. With guidance and assistance of CNCPC, among the 80 member organizations, more than 10 subcenters have been established at sectoral, provincial and municipal levels. Appendix 2 shows the member list of the network

In March 1998, in order to expand the China National Network for Cleaner Production, strengthen information exchange among members of the network and promote CP in China rapidly, Shandong Provincial CP Sub-network was established under the negotiation between secretariat of the national network and the Environmental Engineering Department of Shandong university. The secretariat of the sub-network is located in the Environmental Engineering Department of Shandong University. CNCPC is planning to set up more local CP subnetwork in other provinces or areas.

Based on the management regulation of the network, 3 annual meetings of the network has been held by the secretariat of the network in the last 3 years respectively in Beijing, Nanhai City of Guangdong Province and Benxi City of Liaoning Province. Over 50 representatives participated in each meeting and most of them are members of the network from governmental bodies, industrial sectors, research institutes, universities and industrial enterprises. During the annual meeting, the secretariat of the network (China NCPC) delivered latest materials related to CP to the representatives. And the participating institutions can introduce their experiences on CP and exchange information freely.

4. EMS Consulting Services

The division of EMS Consulting in CNCPC started to provide EMS consulting service in early this year. The division has completed a consulting project of EMS for Beijing ERICSSON Mobile Communication Co. Ltd.. At present, it is continuing EMS consulting tasks in several cities.

5. Development of Information System for CP

CNCPC started development of information system for CP in 1996. At present the database for CP has been established basically after analysis on technical access and investigation of customers demands. The overall systematic framework has been developed. The following research and development of information system for CP will be continued.

V. Finance

In the past 3 years, with financial support of UNIDO and other income earned by CNCPC itself, CNCPC has been operating its business fluently and successfully, and CP has been promoted widely in China.

The Balance sheet of China NCPC is as follows:

Table 1 Balance Sheet

USD

Year	Total Expected income	Expected Funds form UNIDO	Self-earning by CNCPC	Real Funds from UNIDO	Total Real Income of CNCPC	Sustainability (%)
(1)	(2)=(3)+(4)	(3)	(4)	(5)	(6)=(4)+(5)	(7)=(4)/(6)
1996	359,000	319,000	40,000	60,000	100,000	40
1997	379,000	319,000	60,000	60,000	120,000	50
1998	409,000	319,000	90,000	80,000	170,000	53

Note: 1. Column 3 is the total funds form UNIDO to China NCPC, including counterpart institution, international experts, NCPC Director Meeting, Possible Study Projects, Director Salary and Discretionary Budget of China NCPC;

2. Column 4 is the domestic income of China NCPC;

3. Column 5 is the direct funds China NCPC received from UNIDO, including Director Salary and Discretionary Budget;

4. Column 7 shows that China NCPC is improving its self-development capability, and the direct funds from UNIDO is covering the less ratio of China NCPC's budget.

The budget of China NCPC in 1998 is as follows:

Table 12 Budget 1998, USD

Activity	Policy Advice	Study	Information	Training	Creation	Cooperation	Alliances	Building	Total
Expense	20,000	20,000	25,000	20,000	20,000	40,000	10,000	15,000	170,000
Direct staff	6,000	6,000	6,000	4,000	2,000	10,000	2,000	3,000	36,000
Experts	5,000	5,000	5,000	4,000	2,000	6,000	-	3,000	27,000
National	2,000	2,000	5,000	2,000	1,000	4,000	2,000	-	16,000
Internet.	-	-	-	3,000	6,000	6,000	-	-	15,000
Direct admin. costs	2,000	2,000	2,000	2,000	1,000	4,000	2,000	2,000	13,000
General staff	3,000	3,000	4,000	3,000	6,000	6,000	2,000	5,000	28,500
General admin.	2,000	2,000	3,000	2,000	2,000	4,000	2,000	2,000	14,500
Income	20,000	20,000	25,000	20,000	20,000	40,000	10,000	10,000	170,000
Direct income	-	-	10,000	10,000	10,000	40,000	-	-	70,000
External donations	15,000	15,000	10,000	10,000	10,000	-	10,000	10,000	80,000
Local contribution	5,000	5,000	5,000	-	-	-	-	5,000	20,000
Financial service	-	-	-	-	-	-	-	-	-
Cost coverage (%)	-	-	-	-	-	-	-	-	-
Cost coverage I	0	0	56	66	83	133	0	0	-
Cost coverage II	0	0	40	50	50	100	0	0	-
Total cost coverage	100	100	100	100	100	100	100	100	-

Note: 1. Total budget includes "Local contribution", "Direct income" and "External donation" (Director Salary and Discretionary Budget);

2. Cost coverage I is direct income over direct costs, cost coverage II is direct income over total costs, and total cost coverage I is total income over total costs

Appendix 1

The Interim Management Measures for Cleaner Production
(For discussion)

Chapter 1 General rules

Item 1 In order to enhance the pollution prevention, improve the environment, heighten the CP audit level and normalize the conduct of the CP audit organization and the CP auditor, this management measures were made in line with the People's Republic of China Water Pollution Prevention Law", the People's Republic of China Atmosphere Pollution Prevention Law", the People's Republic of China Solid Waste Pollution Prevention Law" , Certain Comments on Carrying out Cleaner Production by National Environmental Protection Agency" and other relevant stipulations.

Item 2 The enterprise CP audit, called in this measures, is the analysis and assessment to the whole process of the production implemented pollution prevention which is existing or plan to proceed. It is a important premise for the enterprise to carry out CP .During the time of analysis and assessment to implement pollution prevention, some schemes, such as reducing the consumption of energy , water and raw materials, eliminating or reducing the consumption of toxic in the products and in the process of production, minimizing the production and emission of all kinds of waste and lowering the toxicity of the waste, are worked out and put into effect.

Item 3 The Environmental Protection administrative department of the People's government is responsible for the CP audit activities in its controlled area under a unified supervise management.

Item 4 Each industry department responsible for the supervise management of CP audit activities in its own industry.

Chapter 2 Procedure and contents of CP audit

Item 5 The procedure and contents of CP audit in the enterprises should be implemented in accordance with the requirement of Manual for Enterprise CP audit", compiled by National Environment Protection Agency.

Item 6 The members of the CP audit team may come from the interior staff of the enterprise or the external auditor engaged by the enterprise. The auditors in the audit team are in charge of the procedure and method of audit and the form of the audit report, and they are also responsible for the truthfulness of the data. At least two CP auditors with the qualification are included in a CP audit team.

Item 7 The CP audit should be assessed by the relevant assessment organization, which include examining and approving the audit report and assessment on-site. The suggestion for the assessment should be signed by the experts from the assessment organization and be sealed by the assessment organization, or it will be invalid.

Chapter 3 Administration of the CP auditor

Item 8 The CP auditor has three levels: associate auditor, auditor and principal auditor.

Item 9 The associate auditor does not have the qualification to carry out CP audit work independently, but he can do it guided with the CP auditor.

Item 10 The CP auditor can carry out the CP audit work independently and has the qualification to sign on the audit report.

Item 11 The principal auditor can not only carry out the CP work independently but also assess the CP audit report made by other auditors if he is entrusted.

Item 12 The associate auditor should possess the following requirements:

(1)Have a fairly high educational level;

(2)Have fairly high work experience of environmental protection, or have other technology and management experiences with elementary knowledge of environmental protection;

(3)Take the training of CP audit foundation course;

(4)Get no less than 10 points of the total qualification marks (see the appendix)

Item 13 The auditor should possess the following requirements:

(1)Have the associate auditor qualification;

(2)Get more than 2 points of CP audit qualification marks;

(3)Get more than 15 points of the total qualification marks.

Item 14 The principal auditor should possess the following requirements:

(1) Have the auditor qualification;

(2) Get more than 4 points of CP audit qualification marks;

(3)Pass the training of CP audit advanced course;

(4)Get more than 22 points of the total qualification marks.

Item 15 the entire CP auditor should be registered in the environmental protection administrative department of the State Council, working with the certificate.

Item 16 The auditor applying for registration at the relevant level should fill in a prescribed form and submit a certificate to National Cleaner Production Center. After having been verified, it will be sent up to the environmental protection administrative department of the State Council for examining and approving.

Item 17 The environment protection administrative department of the State Council will supervise and inspect the CP auditor's qualification regularly, the one that is unqualified should be rescind the qualification.

Item 18 The period of validity of CP associate auditor, auditor and principal auditor is 3 years, 4 years and 5 years separately. They can apply for registration again when expires.

Chapter 4 Training of the CP auditor

Item 19 the entire CP auditor should take part in the regular CP audit training and pass the examination.

Item 20 National Cleaner Production Center is responsible for the management work of the training of CP audit foundation course and CP audit advanced course which be served as a record in the environment protection administrative department of the State Council.

Chapter 5 Setting up the CP audit organization

Item 21 The CP audit organization has two types: the CP audit consulting organization and the CP audit assessment organization. The CP audit consulting organization is responsible for the consulting work of enterprise CP audit, and the CP audit assessment organization is responsible for the assessment work of the enterprise CP audit.

Item 22 The CP audit consulting organization and the CP audit assessment organization must be independent.

Item 23 The CP audit organization should be an independent research or consulting unit and meet the following requirements:

(1)Have a clear legal status;

(2)Have at least 5 full-time CP auditor;

(3)Have a whole set of rules and regulation to ensure the quality of the work.

Item 24 The CP audit consulting organization should be approved by the local environmental protection administrative department of provincial government or relevant industry administrative department and be served as a record in the environment protection administrative department of the State Council. Only after being affirmed can it begin business.

Item 25 The CP audit assessment organization can begin business after being approved by the environment protection administrative department of the State Council.

Item 26 The following assessment of enterprise CP audit should be charged by the assessment organization that is appointed by the environment protection administrative department of the State Council:

(1)The major pollution discharge enterprises in the key pollution controlled area;

(2)The enterprises that use the project with special fund for pollution harness more than 2 million Yuan;

(3)The enterprise who apply for environmental label;

(4)The enterprise who apply for environmental management system certification.

Chapter 6 Reward and Punishment

Item 27 The unit and individual that makes outstanding achievements in carrying out CP will receive commendations and rewards by the environmental protection administrative department.

Item 28 The CP audit organization or the auditor that violate the measure may inflict a notice of criticism, warning, or rescind the qualification according to the degree of seriousness.

Chapter 7 Supplementary articles

Item 29 The enterprise who apply for CP audit assessment should pay the expense of assessment, and the pay standard and the management measures are formulated by the environment protection administrative department of the State Council.

Item 30 The power of interpretation of this measure belongs to National Environmental Protection Agency.

Item 31 This measure will put into effect on the day that is published.

Appendix

The standards of grading for CP auditor qualification marks

The CP auditor qualification marks are divided into five types, those are the training of CP audit foundation course, the background of theoretical knowledge, the work practice of environmental protection, the work practice of CP audit and the training of the CP audit advanced course.

1.The standard of the qualification marks

1.1 The foundation course training of CP audit

examination score	0~59	60~69	70~79	80~89	90~100
qualification marks	0	2	3	4	5

1.2 The theoretical knowledge background

theoretical knowledge background	special school graduate	college graduate	Undergraduate	Master	Doctor
qualification marks	1	2	3	4	5

Notes:

(1)The education background in the table includes the equivalent education;

(2)If gain the professional rank ,keep the score as college graduate does;

(3)If gain the middle-level rank, keep the score as undergraduate does;

(4)If gain the middle-level rank with more than 3 years work experience, keep the score as Master does;

(5)If gain the high-level rank, keep the score as Doctor does.

1.3 The practice of environmental protection

work time for environmental protection(year)	one	two	three	four	five
qualification marks	1	2	3	4	5

Notes:

(1)The time is counted as the actual work time. For example, count 1 year if less than 2 years, and so on and so forth.

(2)Keep the highest score (5 points) if the work time is more than 5 years;

(3)The environmental protection work includes research, design, management, practical operation and so on.

(4)Someone take up other technology and management work, but after being checked, it is proved that he has master the environmental protection foundation knowledge, then the score will be kept with the relevant environmental protection work time .

1.4 The CP audit work

whole course audit (times)	one	two	... ...	nine	ten
qualification marks	1	2	... ...	9	10

Notes:

(1)A whole course" means having joined the 7 stages audit work according to the " Manual for Enterprise CP audit" and taken part in the preliminary stage training, mid-term assessment and the final assessment. The actual work time may not less than 80 hours.
(2)If don't meet the above requirement, the score is kept with the actual content and time of the work. For example, someone took part in 3 fields of the work, and the actual work time surpasses 24 hours, the score may be kept 0.3 point.
(3)The qualification marks of the CP audit may be added up ,but the highest marks can not be more than 10 points.

1.5 The training of advanced course of CP audit

examination score	0~59	60~69	70~79	80~89	90~100
qualification marks	0	2	3	4	5

2.The availability of the qualification marks

2.1 The qualification marks of CP audit work can be available in the two years after finishing the training of CP audit foundation course.
2.2 The qualification marks of CP audit work can be available in the three years after gaining the qualification marks of the training of CP audit advanced course.
2.3 The qualification marks of the auditor may be added up to the principal auditor's qualification marks.

Appendix 2

Member List of China National Cleaner Production Network

(Totally 81 Member Units)

I. Cleaner Production Centers for national, provincial, municipal and industrial sectoral level

1. China National Cleaner Production Center (CNCPC)
2. Training Center for Cleaner Production located in Tingshua University
3. Cleaner Production Center for Sino-Petrochemical Corporation
4. Cleaner Production Center for the chemical industry
5. Cleaner Production Center for the metallurgical industry
6. Cleaner Production Center for the aviation industry
7. Heilongjiang Provincial Center for Cleaner Production
8. Shannxi Provincial Center for Cleaner Production
9. Liaoning Provincial Center for Cleaner Production
10. Xinjiang Center for Cleaner Production
11. Tianjin Municipal Center for Cleaner Production
12. Changsha Municipal Center for Cleaner Production

II. Governmental bodies

1. Certification Center for Environmental Management System of the State Environmental Protection Administration
2. Production and Operation Bureau of China Shipping Industrial Corporation
3. Beijing Municipal Environmental Protection Bureau
4. Shaoxing Municipal Environmental Protection Bureau
5. Qiqiharer Municipal Environmental Protection Bureau
6. Hangzhou Municipal Environmental Protection Bureau
7. Yantai Municipal Environmental Protection Bureau
8. Shenyang Municipal Environmental Protection Bureau
9. Benxi Municipal Environmental Protection Bureau
10. Xiamen Municipal Environmental Protection Bureau
11. Guizhou Provincial Environmental Protection Bureau
12. Coordinated Development Bureau for Nature and Society, the Chinese Sciences Academy
13. The Administration Office for Environmental Protection, the Railway Ministry
14. Beijing Municipal Railway Bureau
15. Promotion Office for Cleaner Production in industries, the Tianjin Municipal Economic Committee

III. Research Institutes

1. Hangzhou Research Institute for Environmental Protection, the Chinese General

Research Academy of Coal Sciences
2. Green Industry and Technology Promotion Center of Shanghai
3. Anhui Provincial Research Institute for Environmental Protection and Environmental Sciences
4. Fujian Provincial Research Institute for Environmental Protection and Environmental Sciences
5. Shenyang Municipal Research Institute for Environmental Sciences
6. Nanjing Municipal Research Institute for Environmental Sciences and Environmental Protection
7. Qingdao Municipal Research Institute for Environmental Protection and Environmental Sciences
8. Qinghai Provincial Research Institute for Environmental Sciences
9. Jilin Provincial Research Institute for Environmental Protection
10. Shanghai Municipal Research Academy for Environmental Protection and Environmental Sciences
11. Nanjing Research Academy of Environmental Sciences, the State Environmental Protection Administration
12. Jiangxi Provincial Research Institute for Environmental Protection and Environmental Sciences
13. Jiangsu Provincial Research Institute for Environmental Sciences
14. Yunnan Provincial Research Institute for Environmental Sciences
15. Hainan Provincial Research Institute for Environmental Sciences
16. Hebei Provincial Research Institute for Environmental Protection
17. Mudanjiang Municipal Research Institute for Environmental Sciences
18. Dalian Municipal Design and Research Institute for Environmental Sciences
19. Beijing Environmental Protection Center for Textile Industry
20. Beijing Municipal General Research Academy for Mining and Metallurgical
21. The Research Institute for Environmental Protection Technologies and Facilities, the Research Academy for Mechanical Sciences
22. Beijing Municipal Monitoring Center for Environmental Protection
23. Fujian Provincial Environmental Monitoring Station
24. Chinese Research Institute for Household Appliances
25. Yantai Green-garden Research Institute for Cleaner technology
26. Fushun Municipal Research Institute for Environmental Protection

IV. Colleges and Universities

1. Environmental Sciences Center of Beijing University
2. Resource Center of Chongqing University
3. Beijing College of Light Industry
4. Environmental Engineering Department, Hebei University
5. Research Center for Cleaner Production and Green Products, Zhejiang Agricultural University
6. Environmental Sciences Department, Hangzhou University