Since its proposal to demonstrate Cleaner Production on the provincial and municipal levels, the Cleaner Production Working Group (CPWG) has been carrying out a large amount of work with the help of the China Council Secretariat, and with the support of the State Environmental Protection Administration (SEPA) and State Economic and Trade Commission (SETC), and the guidance of UNEP. According to the work plans on the project, the key work of the working group over the past year focused on promoting the project implementation in the designated demonstration city, Taiyuan city. The work status and the main achievements are reported as the following.

I. Review of activities

In the early 1990s, the Chinese government shifted the strategy of environment protection from “end-of-pipe” technology to source control and pollution prevention. No doubt, source reduction and cleaner production is a better choice to solve industrial pollution problems, so the implementation of cleaner production was adopted to be one of important tactic measures taken by governments. In 1999, “encouraging the implementation of cleaner production” was mentioned firstly in the governmental work report by Premier Zhu Rongji, which shows that cleaner production deserves an attention of the senior level leadership.

In 1993, the first cleaner production project was carried out under the support of the World Bank, and initial achievements were obtained. Later, 15 bilateral or multilateral international cooperation projects were focused on this domain. All projects show that the strategy of cleaner production is very suitable for China. A national network of cleaner production policies and regulations is underway under the leadership of SEPA.

To the Chinese government the key problem lies in how to push forward and implement cleaner production on the precondition of sustainability. The main obstacles include lack of consciousness of cleaner production and environment protection in enterprise leadership, lack of detailed guidelines of implementation of cleaner production, and lack of service network of technology. In order to overcome these obstacles, accordingly, it is necessary to establish work plans of implementation of cleaner production, especially for local governments at each level (provincial and municipal).

Under this situation, the demonstration of cleaner production on the provincial and municipal level was first proposed at the working conference of the working group in August 1998. Soon after that, it was included in “Recommendations to Chinese Government” submitted by CCICED after its second annual meeting in Phase II. It has significant importance because of its initiation. Taiyuan city was designated as the first pilot city by SETC and SEPA in the project of “Promotion of Cleaner Production Demonstrative Provinces and Cities”.

Cleaner Production Working Group

August 2000
Demonstrative Provinces and Cities”. On March 18, 1999, the start-up conference for “Cleaner Production Demonstrative City” was held in Taiyuan. In May 1999, cleaner production demonstration projects began in nine more demonstration cities and five industrial sectors.

Since September 1999, the working group helped Taiyuan municipal government to implement Cleaner Production Demonstration City project. Main work includes: compilation of “mid-term and long-term plan for cleaner production in Taiyuan”; compilation and discussion of “regulation on cleaner production in Taiyuan”; education and training decision-makers on each level; cleaner production audit demonstration on the industrial enterprise level. All the above work has played significant roles in pushing forward cleaner production in Taiyuan and brought more social, economic and environmental benefit. Moreover, in order to exchange experience about implementation of cleaner production over the whole country, a workshop on the assessment indicators system of cleaner production for the demonstration city and demonstration enterprises will be held in September 2000.

The main work and activities held by the working group in the last year are as follows:
1. September 1999, before the third annual meeting of CCICED Phase II, CPWG held its meeting in Taiyuan. The work status and the main achievements were reviewed for the last year and the work plans were discussed for the next year.
2. February 2000, the workshop on assessment indicators system of cleaner production demonstration city was held in Zhuhai city, Guangdong province. At the same time, a stepwise summary of the project of “promotion of cleaner production demonstrative province and cities” was discussed.
3. April 2000, a meeting was held between the newly-assumed leaders of Taiyuan city and some Chinese group members and scholars. How to push the project forward in Taiyuan, especially on the level of industrial enterprises, was the focus of discussion. The implementation status was investigated and cleaner production opportunities were further explored in some demonstration enterprises. Meanwhile, the inauguration was successfully held to start “Regulation on Cleaner Production in Taiyuan.”
4. September 2000, a countrywide workshop on cleaner production was held in Beijing. The main achievements and experience on cleaner production were reviewed, and its status and development direction were discussed.

II. Main achievements

1. As the first comprehensive local policy on cleaner production, “Regulation on Cleaner Production in Taiyuan” has gone into effect formerly. It not only provides a legal base and legal guarantee for Taiyuan city to carry out cleaner production, but also has a demonstrative function for other provinces and cities to formulate local regulations.
2. The basic framework of the “Assessment Indicators System for Cleaner Production Demonstration City” has been built and will be finished in September 2000 after considerable discussion and onsite investigations held jointly by the department of Environmental Science of Shanxi University, the Laboratory of Environment
Protection of China’s Institute for Radiation Protection, and the Department of Environmental Science and Engineering of Tsinghua University. It can help the demonstration city to implement cleaner production by assessing cleaner production progress, finding the weak links and determining the planned objectives.

3. Since the starting conference for “Cleaner Production Demonstrative City” was held in 1998 and preparatory achievements were obtained, Taiyuan city has been implementing further cleaner production initiatives centering on three main lines, i.e. to carry out the principal part of the project, to adjust and optimize economic structures, and improve economic benefits; to execute the “Blue sky and clear water” project, to strengthen infrastructure construction and environmental control, and to improve life quality and environmental benefit; to implement new regulations and statutes, and create the environment for long-term, high-efficiency operation of cleaner production. Based on the above objectives, a group of cleaner production projects have been arranged within industrial enterprises, especially in the 20% key enterprises in Taiyuan city, such as Taiyuan Steel and Iron Co. and Taiyuan Chemical Industry Group Co. Both environmental benefits and economic benefits are obtained with Cleaner Production.

4. A national workshop on cleaner production, which will provide a basis for exchange and discussion, was held in September 2000. Scholars from industry and academia together with government officials were invited to discuss cleaner production policy and management, cleaner production technologies and clean production theoretical work.

III. The progress of formulating “Regulation on Cleaner Production in Taiyuan”

Since the inauguration of the project “Cleaner Production Demonstrative City” in March 1999, great emphasis was laid on the formulation of “Regulation on Cleaner Production in Taiyuan” by both the working group and Taiyuan municipal government. As Taiyuan city was the first cleaner production pilot city defined by CCICED, SETC and SEPA, this regulation will be the first comprehensive local policy on cleaner production. Its special significance lies in not only providing legal basis and legal guarantee for Taiyuan city to carry out cleaner production, but also having a demonstrative function for other provinces and cities to formulate regulations alike.

Through many rounds of earnest and thorough discussion among the Taiyuan Municipal Party Committee, municipal government and the working group, the draft regulation was formulated. It includes: (1) general principles, (2) operating mechanism and supervision system, (3) legal responsibility, and (4) supplementary articles. The regulation will guide, promote and enforce cleaner production in Taiyuan.

At the workshop held in September 1999, the regulation was further revised after consulting many scholars from home and abroad. Soon after, it obtained final confirmation by the Standing Committee of People’s Congress of Taiyuan and Shanxi province. In April 2000, the inauguration of “Regulation on Cleaner Production in Taiyuan” was held in Taiyuan, which symbolizes the first local cleaner production regulation coming into effect. Although highly praise was given by Taiyuan municipal
Party Committee, Taiyuan municipal government and the scholars attended, it should wait for the checkout from practice.

IV. The progress of “Assessment indicators system for cleaner production demonstration city”

It is very important to promote cleaner production on the city level. A good assessment indicators system can facilitate the implementation of cleaner production in a scientific, regulative and quantitative way. The currently reported indicators mainly focus on product level, enterprise level and industrial sector level, however, there is no indicator on the city level so far. On the other hand, besides Taiyuan city, nine more cities and five industrial sectors are designated to carry out cleaner production demonstration programs by SETC in May 1999, which marks the starting of cleaner production programs at city level in China. So it is an urgent task to build an assessment indicators system for cleaner production demonstration city.

Since March 1999, many stages have been experienced by research group, such as collection of literature, determination of basic principles, construction of basic framework, collection of practical data, etc. After two years’ effort, the assessment indicators system for cleaner production demonstration city comes into being:

Due to the building of the assessment indicators system is an exploratory task, the basic principles are followed: being comprehensive, being quantitative, having several hierarchies, and easy to handle. Based on these principles, the overall cleaner production assessment indicators system composes four subsystems:
1. Consumption and discharge indicators per ten thousand RMB yuan product value, including energy consumption, water consumption, material consumption, waste discharge amount, pollutant discharge amount.
2. Toxic raw material and scarce resources inventory
3. Economic cost-benefit analysis
4. Cleaner production activities

V. Policy recommendations

1. All experiences from home and abroad, especially the achievements obtained by the working group in the past, show that cleaner production is a successful strategy that can bring both economic and environmental benefits. So, promoting cleaner production, and pursuing economic and environmental harmony, sustainable development are suggested to be included as a key objective of macroeconomic policies at national level. Meanwhile, cleaner production, industrial structural adjustment, pollution prevention and environmental quality management should be closely integrated at sector level. The relevant ministries, such as SEPA and SETC, should review and revise the policies and regulations relevant to cleaner production. They could promote cleaner production by strengthening the administrative control on polluting industries, promoting economic incentives, and enhancing coordination and cooperation among themselves.
2. Cleaner production demonstration projects have been inaugurated in ten demonstration cities (Taiyuan city is among them) and five industrial sectors (for example, petroleum chemical industry) since May 1999. Important experiences and lessons have been learned, and initial achievements have been obtained in all these cities and sectors. In order to further pollution prevention over the country, the successful experiences obtained in pilot cities and sectors should be disseminated to other cities and sectors. The working group suggests that relevant ministries, such as SETC and SEPA, should convene conferences and workshops, conduct investigation and research, collect and summarize relevant experiences and lessons, and promote and accelerate the implementation of cleaner production throughout the country.

3. Well-established enterprises’ property right system and perfect marketing order is an essential economic basis for implementation of cleaner production. Municipal governments and their agencies at all levels with economic management functions, should encourage innovation in the economic system, strengthen the modern enterprise system, foster open, unified, competitive and ordered markets. These actions will help to form a solid microeconomic basis and a friendly market environment for enterprises to implement cleaner production.

4. Sound legal system can provide an important guarantee for the implementation of cleaner production. However, the Cleaner Production Law is still underway, which doesn’t satisfy the urgent need of legalization of Cleaner Production. Accordingly, the working group suggests that research on the theories and practices of Cleaner Production Law should be enhanced, and the establishment of the Law should be sped up. The law should clearly specify the legal responsibilities of governments at various levels, the privilege and obligations of enterprises and the public in implementing cleaner production, and provide operational guarantee measures for fulfilling these responsibilities, obligations and rights.

5. The successful experience from home and abroad shows that cleaner production has a considerable potency and strong vitality in all economic domains. However, only the second industrial sector is focused currently in China. So, the first industrial sector and the third industrial sector are suggested to be enforced in future.