

## **Summary Report on 2007 CAI-Asia China Project Emission Inventory Training**

The Foreign Economic Cooperation Office of the State Environmental Protection Administration (FECO-SEPA) and Clean Air Initiative for Asian Cities Center (CAI-Asia Center) jointly held the 'Key Sources Identification and Emission Inventory Development' Training Course on 10-12 December 2007. Mr. Wang Xin, the director of the first division of FECO-SEPA, attended the opening session of the training and gave a remark on behalf of SEPA. He addressed that the training was closely connected with the work focus of SEPA, as well as expressed his appreciation of participation of city representatives at the busy season. FECO provided financial support for the training to ensure adequate fund. The training was also supported by Energy Foundation, Asian Development Bank, and Stockholm Environmental Institute. Twenty two city representatives, who came from 9 cities, namely Changsha, Chengdu, Chongqing, Guangzhou, Hangzhou, Harbin, Qingdao, Tianjin and Urumuqi, and professionals engaged in pollution sources control in Beijing participated in the three-day training. The participants gave considerable recognition on the training organization and courses, hoping that they would be provided with experts' comments in the future practice and clear guidance from SEPA so as to integrate various emission inventory models and provide evidence for air quality management.

### **Course design concept:**

"Key Sources Identification and Emission Inventory Development" training is a second training course of this year following the "Basic Air Quality Management Training" held on October 31 to November 2 2007. In line with the high requirements of environmental quality including air quality of the Eleventh Five-Year Plan, the State Council has assigned nationwide pollution sources survey work. In the field of air quality, the relevant departments at all levels has recognized that air pollution emission inventory is an important part of air quality management. In the past decade, however, the works related to emission inventory were rather mainly research-oriented than policy-oriented. At the same time, knowledge update and capacity improvement is needed to make emission inventory development cost-effective and provide cities with evidence and take responding measures. Therefore, combining the SEI latest experiences of other Asian countries, the training aimed to provide the participants with sufficient tools and skills to assist them in the development of emission management in their cities. In order to make the training more relevant to China's real situation, Prof. Fu Lixin from Environmental Science and Engineering of Tsinghua University was invited to be the course director to take the full charge of material preparing and discussion, as well as coordinating with the other two trainers, namely Associate Professor Wang Shuxiao of the Environmental Science and Engineering of Tsinghua University and Research Associate Harry Vallack from SEI. While equipped with simultaneous interpretation, teaching and coaching of each part were undertaken by both a Chinese trainer and a foreign trainer to ensure well understanding of the course delivered by the participants.

### **Main contents and characteristics:**

The participants used their laptop computer to do on-site exercise regarding Global Air Pollution Forum Manual to enhance understanding and proficiency of developing emission inventory. Compared to emission inventory developed by Europe and US, this approach is characterized by serving policy making, appropriate quantity of data required, simple operation, transparent calculation method, high compatibility, easy to master, etc. The default emission factors adopted are the research results of developing countries such as China, India, Vietnam, etc. The approach is highly compatible with

accordance with IPCC regarding relevant organization and classification, as well as other main approaches including EMPEP/CORINAIR. All of the calculation equation and emission factors have sources noted in reference. Most of the participants think the approach has a potential effect of improving management efficiency with further modification and integration with China's statistic structure.

Urumuqi EPB offered to test this approach in its city to identify specific aspects needed to be improved, which can provide SEPA with a reference for promoting key sources identification and emission inventory development at city level in the future. SEI has coordinated with Urumuqi and formulated specific test plan. It is expected that the test will be finished by end of next March.

#### **Course evaluation analysis:**

As the course was relevant to the basics of urban air quality management, the city representatives were mainly from two departments, namely of air quality management in EPB, and backbone persons responsible for developing air pollution emission Environmetnal Science Institute, Environmental Monoitoring Center

As the contents of the course involved urban air quality management fundamentals, therefore, the representatives of cities were selected from the two departments basically: City Environmental Protection Bureau responsible person in charge of air quality management, the backbone staff responsible for developing air pollution emission inventory or pollution sources management. Among the 12 cities involved in CAI-Asia China Project activities, Guiyang, Luoyang, and Lanzhou failed to assign representative to the training due to the heavy work load at the end of the year and less staff. Each of the other cities assigned two participants with 2 participants each from Urumuqi and Tianjin. Out of a total of 22 city representatives, there were Deputy Division Directors and backbone staff from City EPB , technical professionals including Directors, professors, senior engineers from city EMC, main leaders of Environmental Supervision Center, and Division Director of City Environmental Science Institute. There were also representatives from the Vehicle Emission Control Center of State Environmental Protection Administration. Therefore, the participants' comments are considerably typical.

There are three aspects in course evaluation: pre-communication, travel and airport arrangement; contents and delivering manner of the course; arrangement of course structure. There are 5 levels of rating. If score 4 to 5 is considered as high evaluation, basically all of the participants gave a high general evaluation on the course; generally speaking, 100% of the participants gave high scores on accommodation and logistic arrangement; 95% gave high scores on pre-communication, training material, venue and course delivering manner. As to travel and airport arrangement, while over 70% gave high scores 6% gave a score as low as 1.

Among the comments, the most typical are as follows.

- Suggesting SEPA at national level formulate a guidelines on emission inventory development so as to avoid big gap among different results due to different approaches and make the policy-makers confused.
- The software (approach) is good complement to China's statistic data on NOx, VOC, industrial production process and can improve the completion of emission data of China.
- About data collection and process. The collection and process of data need unique criteria. The software needs to be translated into Chinese, addition of index explanation, localization

according to the index used by China in emission sources survey and environmental statistics.

- Suggesting that the future training on emission inventory development experiences overseas combine with the real conditions in China.

**Demands and hopes of the cities on 2008 working plan:**

Ms. Glynda Bathan, Division Head of CAI-Asia center, attended the training and introduced key points of 2008 work plan to the city participants, addressing that China was the focus of CAI-Asia Center work, hoping to work cooperate with SEPA to strengthen service and guidance to Chinese cities. She was keen on receiving feedback from the cities.

There are four aspects regarding cities' suggestions. 1) Strengthening communications on work experience and approaches among cities, mentioning that venue can be in the cities beyond Beijing, providing opportunities of experience communication and on-site visiting; 2) Training contents should better combine with specific conditions, put forward policy recommendations relevant to technical materials so as to facilitate implementation of air pollution control and utilization of research results ; 3) the training target people should be clearly put in invitation letter before the training and contact person should play better role here to improve training efficiency and follow-up effects. 4) Specific suggestions on training contents :

- More introduction of air quality management experiences in developed countries;;
- More trainings on air quality management technologies and approaches, such as introduction and operation of the latest model, source apportionment ;
- Based on EI training, organizing training on PM10 pollution control, including environmental monitoring, effects of various emission sources, control measures, etc.