

# **Organization of On-site Assessment Workshops for Technology Assessment in Pollution Reduction in Coal-fired Power Plants**

## **Preliminary Note**

**October 2001**

### **1. Objective and Scope**

#### **A. Objective**

In many areas in North-East Asia, local air pollution is a serious problem. And most of the air pollution problems identified in this region are confined to areas of densely populated metropolitan region, areas of heavy industrialization and areas of high coal consumption. In many of the large urban areas of North-East Asia, pollutant concentrations are already exceeded the World Health Organization (WHO) limits recommended for particulate matter and sulfur dioxide. And the continuous development of fossil fuel energy systems, mostly involving coal combustion, will affect seriously the global environment, local and regional ecosystems and public health with increasing emissions of carbon dioxide, sulfur dioxide, nitrogen oxides, and particulate matter.

In order to prevent this impending environmental crisis, it has been called upon that the countries in North-East Asia should take urgent actions to prevent increasing pollution through cooperative efforts among countries. And, it is considered that, among different measures to address air pollution control in North East Asia, reduction of pollution emitted from existing coal-fired power plants, in particular, through improvements in operation and maintenance (O&M), and retrofits and refurbishment to increase their efficiency, would be significantly effective. The establishment of a subregional training programme, including the establishment of a subregional training center, for pollution reduction in coal-fired power plant has thus been proposed as a timely project in the Project Profile that was formulated as the primary outcome of the previous phase activities of the NEASPEC project. The proposal was subsequently endorsed by the Fourth Meeting of Senior Officials on Environmental Cooperation in North East Asia held in Moscow in January 1998, together with the offer by the Republic of Korea that the subregional training centre would be hosted by the Korea Electric Power Research Institute (KEPRI), Daejeon, Republic of Korea.

## B. Scope of the Activity

The activities proposed in the Project Profile included the organization of on-site assessment workshops for technology demonstration and technology assessment on coal-fired power plants in the NEA countries. However, due to the limited technical and administrative capacity of the Training Centre, it has been proposed that the organization of on-site assessment workshops should be implemented, in principle, separately from the activity of the Training Centre. Therefore, the modality in the organization of the on-site workshops has yet to be identified by the ESCAP secretariat in full consultation with the participating country Governments.

During the current project period, two on-site assessment workshops may be organized by ESCAP with the cooperation of the participating countries and relevant organizations. The detailed contents of the workshops are provisionally proposed as described in the following section.

## 2. Project Activity

### A. Organization of on-site assessment workshops for technology demonstration and technology assessment

The on-site assessment workshops will function both as training activity for participants, and as a mechanism for formulating practical recommendations on pollution control and best practice operations for each plant studied.

During the current project period, two on-site assessment workshops will be organized with the cooperation of the participating countries and relevant organizations ESCAP and ADB.

#### (1) The first on-site assessment workshop for technology demonstration and technology assessment

- 1) Provisional date: April 2002
- 2) Duration: three days including a two-day international workshop session and a half-day technical forum open to local participants.
- 3) Provisional Location: an appropriate power plant sites in a participating country (e.g. China or Mongolia) to be designated by the respective host country organization.
- 4) Target Participants: Participants at the first training course and representatives of

relevant national institutions for the international workshop, plus additional local participants for the open forum.

- 5) Provisional Agenda: The international workshop essentially consists of a) observation of the plant with explanation by the plant manager, b) discussions based on the findings at the plant observation, and c) joint formulation of recommendations. The topics to be covered included i) possibilities of improvement of day-to-day O&M operations for efficiency improvement and pollution control, ii) possibilities of improvement in overall plant management, iii) possibilities of upgrade and retrofit for pollution control systems and efficiency improvement, etc.

(2) The second on-site assessment workshop for technology demonstration and technology assessment

- The second on-site assessment workshop will be organized around November 2002 at an appropriate power plant sites in a participating country (e.g. Mongolia or Russia). The programme for the workshop will be formulated taking into account feedbacks from the first on-site assessment workshops, the mid-term review meeting and NEASPEC/SOM8.

As possible host facility for the on-site assessment workshops, one coal-fired power plant may be designated by each of participating countries, perhaps among those that have serious pollution problems and need remedial actions. The host facilities for each of the two on-site assessment workshops will be decided in full consultations with all the NEASPEC countries.

On-site assessment workshops will be facilitated by an appropriate experts designated by the host country, with appropriate support of technical staff of the subregional training centre.

Each of the two on-site assessment workshops will be organized in two parts: two-day international workshop session and a half-day technical forum open to local participants:

The international workshop would focus on implementation of best-practice O&M and installation of retrofit technologies that will lead to either efficiency improvements, enhanced air pollution abatement, or some combination of these measures. The participants will identify remedial actions needed at each power plant and will jointly formulate recommendations in cooperation with the workshop organizer (expert from the host country and technical staff of the Training Centre). Such recommendations may include estimating capital expenditures for upgrade and retrofit of pollution control equipment and efficiency-enhancing technologies.

The result of the international workshop will be communicated in the national language, at the technical forum open to the local participants.

A sample on-site assessment and training will be held in ROK, visiting Poryong Power Plant and/or Donghae Power Plant, during the both first and second training courses at the Training Centre in KEPRI to see what pollution control options have been applied and how they are functioning. Similarly, on-site assessment in Japan, if conducted, would also focus new pollution reduction systems and environmentally sound technologies installed and on operation. Such information on pollution control options, together with the exercises of formulating recommendations on remedial actions for several power plants, will certainly enhance the capacity of the participants in conducting the assessment of remedial actions needed for their own power plant in the future.

#### B. Reporting of the Project Activity

The progress of all project activities, including the organization of on-site assessment workshops, should be reported to the Project Review Meetings for review and guidance. During the current project period, it is proposed that two the Project Review Meetings, i.e. the Mid-term Review Meeting (around June 2002) and the Final Review Meeting (around , will be organized by ESCAP, in the framework of the Technical Assistance on Transboundary Environmental Cooperation in North East Asia financed by the Asian Development Bank (ADB).