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ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

**REPORT OF THE MID-TERM REVIEW MEETING ON TECHNICAL
ASSISTANCE FOR ENVIRONMENTAL COOPERATION
IN NORTH-EAST ASIA**

Bangkok, 20 and 21 October 1997

I. ORGANIZATION OF THE MEETING

1. The Mid-term Review Meeting on Technical Assistance for Environmental Cooperation in North-East Asia was held at Bangkok on 20 and 21 October 1997. It was organized by the Economic and Social Commission for Asia and the Pacific (ESCAP) in cooperation with the Asian Development Bank (ADB)

A. Attendance

2. The Meeting was attended by representatives of all the six participating countries of the North-East Asian subregion, China, the Democratic People's Republic of Korea, Japan, Mongolia, the Republic of Korea and the Russian Federation. The list of participants is contained in the annex to the present report.

3. The United Nations Environment Programme (UNEP) and ADB were also represented at the Meeting.

B. Opening statements

4. The Executive Secretary of ESCAP, in opening the Meeting, expressed gratitude to ADB for its support of the project on technical assistance for environmental cooperation in North-East Asia, and acknowledged the strong support that ESCAP had received from the Governments and institutions collaborating in the project. He urged the Meeting to keep in mind the major goals of the project, which were to promote clean coal technology and capacity-building for air quality management through environmental cooperation in the North-East Asian subregion. In closing, he requested that Mr. Prodipto Ghosh, representing ADB, chair the Meeting.

5. Mr. Ghosh noted that much of the work of the initial phases of the project had already been completed, and that it was now possible to begin to focus on the future work. He stated that ADB was interested in North-East Asian environmental

protection in terms of mechanisms and framework in relation to the strategic aims of the environment and natural resources programme of the Bank.

C. Adoption of the agenda

6. The Meeting adopted the following agenda:
 1. Opening of the Meeting.
 2. Adoption of the agenda.
 3. Review of the completed activities of the regional project on technical assistance for environmental cooperation in North-East Asia:
 - (a) Subproject I. Training for sulphur dioxide reduction in coal-fired power plants;
 - (b) Subproject II. Demonstration of low-air pollution coal-fired power plant technology;
 - (c) Subproject III. Environmental pollution: data collection, comparability and analysis.
 4. Work plan for the remaining activities under ADB technical assistance for environmental cooperation in North-East Asia.
 5. Project profiles:
 - (a) Technical assistance projects;
 - (b) Investment projects.
 6. Other matters.
 7. Adoption of the report.

II. REVIEW OF THE COMPLETED ACTIVITIES OF THE REGIONAL PROJECT ON TECHNICAL ASSISTANCE FOR ENVIRONMENTAL COOPERATION IN NORTH-EAST ASIA

(Item 3 of the agenda)

7. The Meeting considered document ENR/MTR/ECNA/1/Rev.1, which included overviews and recommendations of the completed activities of the three subproject listed in the agenda.

8. Recommendations for subproject I reviewed by the Meeting fell into three categories: capacity and institution-building, application of clean coal technologies, and financial and economic aspects. The exchange of experience among power plant experts throughout North-East Asia was an example of the kind of technical cooperation envisioned by the Meeting that would build capacity in the subregion. It was further recommended that the capacity to reduce air pollution in the subregion would improve through increased awareness of clean coal technologies. Finally, in terms of institution-building, the Meeting recommended that a coal-fired power plant training centre be established in the subregion in an existing research institution.

9. Regarding the application of clean coal technologies, the participants recommended that systematic methods for the installation of new pollution abatement technologies could be developed to assist in power plant planning projects in the subregion. While recognizing that differences might exist from country to country with respect to the minimum level of pollution abatement equipment that would be required for new power plants, the Meeting recommended that the principle of having minimum standards for air pollution reduction for new plants be incorporated in the air quality management practices of each country. Finally, a recommendation that alternative methods should be identified for domestic heating, such as the use of coal briquettes instead of plain coal or wood, was viewed as country-specific, with China and Mongolia appearing to be the principal beneficiaries of that form of technical assistance.

10. Recommendations relating to the financial and economic aspects included the suggestions that the private sector could become more involved in pollution abatement projects in the subregion. The Meeting noted that private companies that sold pollution abatement equipment had an interest in promoting their own products, especially in a country where the company was not well known. Such promotion often included favourable terms of sale so that the company could establish a foothold as a new market. Another recommendation was that a private sector coal-cleaning capacity be developed in the subregion.

11. There was much discussion of the recommendations on developing economic valuations of pollutant emission impacts and making use of cost-benefit analysis to develop regulations so as to optimize the cost of pollution abatement technologies. It was recognized that those methods were very complex and difficult to accomplish and the Meeting was of the view that such methodologies were not feasible for project planning in the subregion at that stage.

12. Recommendations for subproject II reviewed by the Meeting fell into the following five categories: upgrading particulate matter removal capabilities; enhancing regional monitoring capabilities; promoting appropriate clean coal technologies; improving operation and maintenance at power plants; and developing institutions through specialized training.

13. Under the heading of upgrading particulate matter emission abatement systems, the Meeting recommended that a demonstration of retrofit and upgrade technologies be conducted. In conjunction with a demonstration, it would make sense also to conduct a study of fly ash chemical and physical properties to investigate the potential for enhancing electrostatic precipitator (ESP) performance through flue gas conditioning. The participants also recommended that a demonstration of scrubber

technology upgrade options be conducted to examine the potential for improving the efficiency of particulate matter removal from existing scrubber systems in North-East Asia.

14. The Meeting recommended that the installation of stack emission monitors for SO₂, NO_x and particulate matter should be promoted. Another form of stack emission-monitoring capability was considered, namely, through a van equipped with continuous gas analysers for measuring SO₂, NO_x, CO and O₂ concentrations. The van would be able to assist several plants with stack emission measurements. Finally, the Meeting recommended that consideration should be given to developing regional capability to conduct sophisticated stack emissions and ambient monitoring to assess the environmental performance of new and existing power plants accurately.

15. Appropriate clean coal technologies that were recommended included coal washing, new combustion technologies, for example, fluidized bed combustion, and low-NO_x burners. In addition, the Meeting recommended that a demonstration and on-site training workshop on the subject of advanced flue gas desulphurization systems be held. The Meeting noted that the proposed workshop at Nanjing, China in November 1997 would include that subject. Finally, a recommendation for a pilot project to demonstrate the dry solvent duct injection flue gas desulphurization technique for SO₂ removal was agreed upon.

16. With respect to operation and maintenance improvement, the Meeting recommended that specialized training on the best operating practices for existing power plant systems (boilers, ESPs, etc.) be organized. Such training would include relevant computer models, expert system evaluations, and effective operating and maintenance techniques for ESPs.

17. On the subject of training and institutional development, the Meeting held the view that training should be available through a subregional training centre on the general topic of environmentally sound power generation, including air pollution abatement. The centre would encourage technology transfer by developing a subregional network of experts and expertise that would be known throughout North-East Asia.

18. Recommendations for subproject III reviewed by the Meeting were in the categories of subregional training and skills development, and institutional/network building. Subregional training on the principles and operation of the monitoring equipment could be included in the subregional cooperation programme on the methodologies to use for monitoring stack emissions and ambient environmental quality in order to promote intercountry comparability of data. It was further suggested that those functions could be included as activities of the regional environmental data centre. The other recommendation in that category was the development of infrastructural capacities in the appropriate sectors for the maintenance and upgrading of monitoring equipment. That recommendation was intended to meet the practical need to ensure that calibration gases, spare parts, and well-trained repair technicians were all available to maintain an effective environmental quality monitoring programme.

19. With regard to institutional/network building, the Meeting recommended that the regional environment data centre be established to coordinate comparability of monitoring equipment, analytical methods, calibration practices, sampling methods, and presentation and analysis of data. It was also recommended that a network of ambient air quality monitoring stations be identified for the subregion as a focus for subregional cooperation. It was further recommended that common equipment be

acquired and used for the subregional air quality monitoring network to facilitate intercountry comparability of the collected data. Finally, the meeting recommended the development of a project to deal with the comparability of emission inventory data through an agreed methodology. It was noted that the last recommendation was not intended for the collection of emission inventory data but for intercountry comparability of data collected by the countries.

III. WORK PLAN FOR THE REMAINING ACTIVITIES UNDER ASIAN DEVELOPMENT BANK TECHNICAL ASSISTANCE FOR ENVIRONMENTAL COOPERATION IN NORTH-EAST ASIA

(Item 4 of the agenda)

20. The remaining project activities included a technology demonstration workshop on flue gas desulphurization proposed for Nanjing, China in November 1997, a technology demonstration workshop early in 1998 on the subject of particulate emissions removal, and a final project review meeting at ADB headquarters in Manila. At the present Meeting, a proposal came from the Russian delegation that a technology demonstration workshop be conducted in conjunction with the meeting of senior environmental officials set for 13-16 January 1998 in Moscow. Those activities would be conducted within the existing project budget.

21. The Meeting discussed and endorsed the tentative agenda and the proposed outline of papers for the Nanjing workshop. It noted the possibility of private sector participation from vendors of retrofit scrubber technology.

22. A technology demonstration workshop on the subject of particulate emissions abatement, particularly ESPs, was noted by the Meeting. That would be the fifth technology demonstration workshop under subproject II of the technical assistance and regional cooperation project. The representative of Japan mentioned the request

by the ESCAP secretariat that Japan host that event was currently under consideration by the Government. The Meeting agreed that the topics for discussion at the workshop are very appropriate for the overall project.

23. The final review Meeting for the initial phases of the overall project would be held at the headquarters of ADB in Manila. The meeting might be held after completion of all of the technology demonstration workshops.

24. The Russian delegation's proposal to host a technology demonstration workshop under subproject II of the overall project was well received by the Meeting. The focus of the workshop would be on demonstrating new Russian technologies for air pollution abatement and an economic mechanism for encouraging coal-fired power plants to utilize fly ash. It was recommended that the workshop be held back-to-back with the senior officials meeting already scheduled for 13-16 January 1998 in Moscow. A specific proposal for the workshop agenda would be developed by the Russian authorities in advance of the senior officials meeting.

25. The Japanese delegation offered to host a joint workshop in Japan on the subject of subproject III. The topic of the additional workshop would be emission inventory development in the North-East Asian subregion. The Japan Environment Agency was primarily interested in emission inventory development for SO₂, and NO_x. Particulate matter emissions might be included in future efforts. The workshop could be held after March 1998, following budget approval.

IV. PROJECT PROFILES: TECHNICAL ASSISTANCE PROJECTS AND INVESTMENT PROJECTS

(Item 5 of the agenda)

26. The Meeting reviewed the four project profiles in document ENR/MTR/ECNA/3 and made comments and suggestions. After revision, the four project

profiles might be submitted to the Fourth Meeting of Senior Officials on Environmental Cooperation in North-East Asia. The Meeting also recommended that the fourth project proposal on demonstration of dry solvent duct injection flue gas desulphurization technology should be further discussed by the participants in the Nanjing demonstration and on-site workshop on flue gas desulphurization technology.

27. In the course of discussion of the project profiles with regard to their implementation, the Meeting suggested the identification and development of subregional centres on the theme of air pollution abatement power plant technologies and environmental database initially for air quality which could be later expanded to include water quality data. The discussion also included consideration of distributed centres on specialized areas of power plant technologies, such as on ESPs. While considering the possibility of establishing subregional centres, the Meeting noted with appreciation the proposal from China on a subregional centre on low air pollution for coal-fired power plant technology and that from the Republic of Korea on a subregional environmental data and information centre.

28. The Meeting also noted the offer that the subregional centre on environmentally sound power generation, including pollution control, be located at the Korea Electric Power Research Institute (KEPRI). The centre could also undertake a programme for the identification of chemical and physical properties of coal, coal preparation, estimation of combustion phenomena by using combustion test facilities, operation and maintenance techniques to achieve higher performance, prediction of ESP performance and pollutants emission. The Meeting requested that those proposals be further elaborated for consideration at the Fourth Meeting of Senior Officials.

29. In connection with the second project profile the Meeting noted the suggestion of the representative of the Russian Federation that space technology for pollution monitoring be included as an option. There were discussions on the practicability of its use for the parameters that could be monitored and the resolution. To address those issues, the representative of the Russian Federation offered a demonstration at the facility at Star City for the Senior Officials. The matter could be further considered at the Meeting of Senior Officials following the demonstration.

30. The Meeting noted an additional project concept on subregional cooperation in biodiversity conservation proposed by the Russian Federation. Since the Senior Officials had already approved the submission of the project on North-East Asian subregional biodiversity to the Global Environment Facility (GEF) for funding, the Meeting felt that there was a need to specify clearly the rationale for that project concept and also how it differed from the earlier biodiversity project. The Meeting requested the Russian Federation to transmit its proposal to the secretariat by 15 November 1997, so that it could be transmitted to the governments in time for consideration by the Fourth Meeting of Senior Officials.

V. OTHER MATTERS

(Item 6 of the agenda)

31. The Meeting expressed deep appreciation to ADB for the funding it had provided towards the implementation of the project, which had contributed to the successful organization of the Meeting.

VI. ADOPTION OF THE REPORT

(Item 7 of the agenda)

32. The Meeting adopted the report on 21 October 1997.

Annex

LIST OF PARTICIPANTS

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