1. BACKGROUND

The First Phase work of the group has been completed, thanks to the cooperation of both Chinese and foreign experts. Together they investigated the status of the environments in three cities (Guangzhou, Chongqing, and Suzhou) and the area along the Dongjiang River, which is one of the main branches of Zhujiang River. They also did research work on the strategy and policy for controlling pollution. Meanwhile, TNO of the Netherlands proposed a report on CO2 emission in China based on collected relative information. The first stage work of the group earned full praise from the Council.

The Council concluded at its fifth meeting held in Shanghai last September that in the field of pollution control, the plans for preventing water pollution and protecting water resources in cities, as well as the plans for energy resources in the cities, should be made. The trans-province coordinating organization for different executive branches should be established to solve the trans-province environment problems of water, air and so forth which cover more than one area. At the same time, the national plan for global environmental problems, including climate changes, should be further improved. The Council also indicated that in the second stage, work should be transformed from the principle discussion to practical demonstration of projects.

While we were considering our work plan for the second stage, we reviewed the achievements made during the first stage. We also reviewed the suggestions proposed for Chinese government and the requirement set for the second stage work from the fifth meeting of the Council.

Based on the comments of the Council, suggestions from Dr. Schneider and in light of the major environmental problems we are facing, it is concluded that the work plan for the pollution control group in the second stage should focus on the following five items:

1. Energy environment planning and policy implementation in a typical Chinese city.
2. Planning on the prevention and control of water pollution for the catchment of the Zhujiang River in Guangdong Province.
3. China's trans-province acid deposition issues and regional control scheme.
5. Completing the series of documents on the state of the environment (Zibo) and preparing a guideline book for future use by other Chinese urban areas.

2. THE FIRST MEETING OF WORKING GROUP FOR THE SECOND PHASE

Presided by Prof. Qu Geping and Dr. Toni Schneider, the working group held the first meeting in Beijing, 19-20 August 1997. Foreign experts Dr. SiDuk Lee and Dr. Shuzo Nishioka also attended the meeting. Chinese experts or their representatives were Mr. Wu Baozhong, Mr. Qiang Binghuan, Prof. Jing Wenyong, Prof. Liu Xueyi, and Prof. Hao Jiming on behalf of Prof. He Kebin and Dr. Zhang Yuanhang on behalf of Prof. Tang Xiaoyan. Representatives from Suzhou, Zibo City and the Secretariat of the Council attended the meeting as well.

Prof. Qu Geping and Dr. Schneider gave the opening address. The suggestion for the plan of the working group were introduced by Dr.
Schneider and Mr. Wu Baozhong. Four items were discussed in detail. A lot of constructive suggestions were collected during the ardent discussion. The financial problems were discussed as well. The meeting confirmed the schedule of several workshops and next working group meeting in 1997 and 1998. Meanwhile, representatives from Suzhou and Zibo reported on their projects in the First Phase.

After final discussion, the working group concluded on the following general consideration of the plan:

1. The team of experts for the second working group are strengthened. The plan fully meets the requirements from the fifth council and correlates well with the national environment task of China's ninth five-year key plan.

2. The experts fully agreed on the importance of information exchanging. Besides that, the WG should enlarge the work team including different branches of the government and experts of related fields. In this way, the plan can be finished successfully and the research achievement can be applied well. Work outputs should be better distributed internationally, in order to get more funding from all kinds of channels.

3. Funds needed for the accomplishment of the projects are very important. Prof. Qu stressed that it is impossible to finish those four projects only with the funds from the local Chinese governments and the limited international funds for foreign experts and workshops! So the working group hopes that the council can make some progress identifying more funds and improvements on how to use those funds.

3. OBJECTIVES

In the Second Phase, the working group will select typical regions and cities to carry out studies on the acid deposition and control, prevention of water pollution for the catchment & the protection of water resources, the coordinate planning for urban energy & environment and strategy of mitigation of CO2 emission. The purposes of those studies are try to solve the urgent environment problems faced in Chinese regions and cities and provide reference to the government.

If the required funds are available, the working group will implement the demonstration projects. The demonstrations will help the achievements to be applied and further extended.

4. WORKING PLAN

The following are summaries of the four projects of the working group.

4.1 Energy Environment Planning and Policy Implementation in a Typical Chinese City

In the process of drawing up the national ninth five-year economic development plan and the outline plan to the year 2010, most cities, especially medium sized and large cities, have already carried out some planning in the areas of energy and environment covering for the same period. The problem is how to realize the coordinate development of energy and environment, which is a weak point in a chain for most cities. Therefore, it is necessary to choose a typical city and study the coordinate development of energy and environment. Currently, the typical city under consideration is Shanghai. After a preliminary exchange of ideas, the authorities in Shanghai have principally agreed to conduct the research project.

Main Research Contents

1. Prediction and planning of urban energy demand.

2. Analysis on current status of air pollution.

3. Research on the coordination between air quality planning and urban energy planning.

4. Prediction and planning of ambient air quality.

5. Decision-making supporting system for air pollution control.

6. Demonstration of the policy and project to implement energy environment planning in Shanghai.

Expected Achievements
(1) Energy demand prediction and energy planning for Shanghai.

(2) Ambient air quality planning for Shanghai.

(3) Coordinated urban energy and environment planning.

(4) Policy of Coordinated urban energy and environment planning.

(5) Policy & project demonstration: implementing integrated urban energy environment planning, determination of air pollution emission reduction.

Schedule

1997.12 to 1998.8 Collecting relevant data and information, establishing

and testing models.

1998.3 to 1999.6 Energy environment planning.

1999.3 to 2000.6 Policy and project demonstration.

Fund Estimation

(1) Data collecting and supplementary testing, US$50,000

(2) Urban energy environment planning, US$40,000

(3) Decision-making supporting system, US$50,000

(4) Policy and project demonstrations, US$60,000

Total: US$200,000

(As a first estimation, a total of US$200,000 is needed. Half of the funds are intended to be sponsored by the government of Shanghai City. Remaining funds (mainly for training, study trip, technical material material, demonstration) require international funding.)

4.2 Planning on the Prevention and Control of Water Pollution for the Catchment of the Zhujiang River in Guangdong Province

Based on the serial achievements made during researches into water management systems for the area along the Dongjiang River in phase one, consideration was given to extending the research into the planning of water pollution prevention and control along the whole area of the Zhujiang River. But to conduct research for the whole area was not practical due to current manpower resources and particularly limited funding. Therefore, the research is concentrated to the stretch of the Zhujiang River within Guangdong Province. This will enable us to gain more experience before further extending the research area. These considerations, following the examples of the Huaihe River, Liaohe River, and the Haihe River, are intended as an advanced step in the realization of comprehensive control and prevention of water pollution along a river in a fast developing region. This project is supported by the Guangdong Province.

Main Research Contents

(1) Identifying the main problems of water environment for the catchment of Zhujiang River in Guangdong Province.

(2) Total control of water pollution in the catchment of Zhujiang River.

(3) Planning of the water pollution control engineering in the catchment of Zhujiang River in Guangdong Province.

(4) Supporting system for comprehensive prevention of water pollution in the catchment.

(5) Monitoring control system and management system for water environment of the catchment of Zhujiang River in Guangdong Province.

(6) Demonstration of policy and project in typical counties and cities.
Expected Achievements

(1) Strategies and measures of environment management for the Zhujiang River in Guangdong Province.

(2) Total control scheme of water pollutants in the catchment.

(3) Strategy and planning of water environment for related cities and counties.

(4) Demonstration of policy and project in typical counties and cities.

(5) Environment management theories and planning methods for a large catchment, decision-making supporting system for water environment management.

Schedule

1997.9 to 1997.12 Data collection and analysis

1998.1 to 1998.8 Supplementary investigation and Monitoring

1998.4 to 1998.12 Research on total control and establishment of database

and model

1998.6 to 1999.2 Research on total control scheme

1998.9 to 1999.2 Analysis and optimization of the scheme on water pollution control engineering

1998.11 to 1999.2 Research on management systems

1999.2 to 1999.5 Suggestion collecting and report writing

1999.6 to 1999.9 Submitting the report

Fund Estimation

Part of the required funds are provided by the government of Guangdong Province. The other part, mainly staff training, information exchanging and case study, needs international funding.

(1) US$200,000 Project study, sponsored by government of Guangdong Province

(2) US$25,000 Staff training, workshop, international funds needed

(3) US$25,000 Foreign software, foreign technical material, international funds needed

(4) US$100,000 Case study of water pollution control in typical city, international funds needed

US$350,000 Total

(US$200,000 from government of Guangdong Province,

US$150,000 requires international funding.)

4.3 China's Trans-province Acid Deposition Issues and Regional Control Scheme

Along with the rapid development of the Chinese economy and an increase of energy consumption, especially the coal consumption, pollution by sulphur and nitrogen dioxide emissions has been increasing. According to the regulations contained in China’s Law on Air Pollution Control, revised in 1995, the control zones for acid deposition and sulphur dioxide pollution are currently being delimited for the whole country.
Comprehensive control of acid deposition and SO2 pollution will be carried out in those delimited zones. Research on trans-province transport of acid deposition and regional control scheme will help to control the increasing trends of pollution through more effective coordination within different administrative areas. In light of the status of energy consumption and related pollution in China, suitable long-range transport models will be adopted to select areas sensitive to acid deposition. Therefore, research into a regional control scheme will correspondingly be carried out in certain areas. Based on this work, further research on demonstration of policy and project will be conducted to implement the comprehensive control scheme. Output from the research will later extend all over the delimited acid deposition and SO2 control zones.

Main Research Contents

(1) Analysis of long distance transport model for the acid deposition.

(2) Analysis of the sensibility of south and east China areas for acid deposition.

(3) Application of the long distance transport model and critical load model.

(4) Regional control scheme of trans-province acid deposition in a typical area.

(5) Demonstration of regional control scheme (including emission control technologies and related policies).

Expected Achievements

(1) Suggestions for the suitable models addressing trans-province acid deposition issue in China.

(2) Suggestion for regional control strategy of trans-province acid deposition in China.

(3) Analysis reports of the demonstration of regional control scheme.

Schedule

1997.10 to 1998.10 Analysis of long distance transport model for the acid deposition, and the analysis of China's energy consumption and acidification precursor emission

1997.10 to 1998.6 Research, application and comparison of long distance transport models in China

1997.10 to 1998.6 Collection of eco-system parameters and other basic data

1997.10 to 1998.12 Analysis of the sensibility of south China areas on the acid deposition

1999.1 to 1999.6 Regional control scheme of trans-province acid deposition in a typical area

1999.6 to 2000.3 Demonstration of regional control scheme, final draft report

2000.3 to 2000.6 Final report

Fund Estimation

(1) US$ 100,000 Analysis and application of long distance transport model for the acid deposition, international funds needed

(2) US$ 150,000 Analysis of the sensibility of south China areas to the acid deposition, international funds needed

(3) US$ 150,000 Regional control scheme of trans-province acid deposition, international funds needed

(4) US$ 500,000 Demonstration of regional comprehensive control scheme for trans-province acid deposition, international funds needed

US$ 900,000 First estimation of the total needed.

4.4 Strategy of Mitigating CO2 Emissions and Project Demonstration of Reducing CO2 Emissions in China
China actively joined the Climate Change Framework Treaty. Although the treaty doesn't impose a reduction limit for developing countries, as a result of the transformation of China's economy development mode and realization of sustainable development of its own, China has found it necessary to carry out research on the strategy for CO2 emission mitigation and project demonstration for CO2 emission reduction.

Main Research Contents

(1) Estimation of CO2 emission and research on uncertainties of basic factors in the estimation of CO2 emission in China
(2) Foreign techniques, regulations, plans and policies of reducing CO2 emission and the feasible ways of technique transfer from developed countries into China
(3) Project demonstration on reducing CO2 emission in China and analysis of the potential of steel industry for reducing CO2 emission
(4) Strategies and measures of mitigating CO2 emission in China

Expected Achievements

(1) Analysis of current status of CO2 emission in China.
(2) Analysis of foreign measures of reducing CO2 emission and the feasible ways of technique transfer from developed countries into China.
(3) Analysis of the potential of coke dry quenching on reducing CO2 emission.
(4) Suggestions on the strategies and measures of mitigating China's CO2 emission.

Schedule

1997.9 to 1998.10 Estimation of CO2 emission and research on uncertainties of factors in the estimation of CO2 emission
1998.8 to 1999.10 Foreign measures of reducing CO2 emission and feasibility studies of technique transfer of reducing CO2 emission
1998.8 to 1999.12 Analysis of potential of steel industry for reducing CO2 emission and project demonstration on reducing CO2 emission
1999.9 to 2000.6 Research on strategies and measures of mitigating CO2 emission in China

Fund Estimation

(1) US$ 50,000 Research on uncertainties of basic factors in the estimation of CO2 emission, international funds needed
(2) US$ 80,000 Material of foreign techniques, regulations, plans and policies of reducing CO2 emission, international funds needed
(3) US$ 250,000 Project demonstration of reducing CO2 emission (including testing CO2 emission of coke dry and coke wet quenching and demonstration of coke dry quenching project), international funds needed
(4) US$ 80,000 Strategy of mitigating CO2 emission, international funds needed
US$ 460,000 First estimation of the total needed.

5. WORKSHOP AND MEETINGS

According to the extension of work of the First Phase working group and the needs of the current plan, we have arranged some workshops and meetings in 1997 and 1998, as follows.

(1) 1997.11 Consultation meeting of experts on acid rain, Shanghai
(2) 1197.11 Workshop on uncertainty of estimation of CO2 emission, Shanghai
(3) 1997.11 Workshop on monitoring stationary source emission, Shanghai
(4) 1997.11 Task force meeting on case study of Zibo city, Zibo

(5) 1998.4 Workshop on risk-based pollution control decision making, Beijing

(6) 1998.3-4 Study trip and working group meeting

(7) 1998.summer Second acid rain workshop

(8) 1998.summer Second workshop on CO2 emission

(9) 1998.fall Working group meeting.