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Executive Committee of the
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Implementation of the Montreal Protocol

Seventh Meeting
Montreal, 23-26 June 1992

UNDP PROGRESS REPORT

SEVENTH MEETING OF THE EXECUTIVE COMMITTEE OF THE INTERIM MULTILATERAL
FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL
(23-26 June 1992, Montreal)

UNITED NATIONS DEVELOPMENT PROGRAMME

Progress Report

This progress report updates that presented to the Sixth Meeting of the Executive Committee during 27-28 February 1992 in Montreal. It is presented in three sections followed by two annexes:

- | | |
|---|---------|
| A) Country activities (including assistance in country programme formulation) | Page 1 |
| B) Sectoral and other activities | Page 8 |
| C) Conclusions and summary of requests for Executive Committee approval | Page 11 |

Annex 1 Page 12

China: Inclusion of two solvents demonstration projects in UNDP's 1992 work programme:

- a) Dalian Precision Parts Cleaning Line (\$450,000)
- b) Dandong Electronic Tuner Cleaning Line (\$470,000)

Annex 2 Page 15

Egypt: Appraisal of two investment projects financed under UNDP's already approved \$1.5 million investment project preparation grant:

- a) Phasing-out 100 tonnes/yr of CFC-11 at Misr Foam Company.
- b) Replacing 30 tonnes/yr of CFC-11 at Technopol Egypt Company.

A. COUNTRY ACTIVITIES

(including assistance in country programme formulation)

ARGENTINA

Under its country programme (CP) preparation, UNDP will assist the Government in evaluation of technical, policy and other options available to Argentina to meet its obligations under the Protocol. UNDP is coordinating with the World Bank which is the lead agency for CP formulation.

BANGLADESH

The ODS reconnaissance study is starting and will be immediately followed by CP preparation. Both will be conducted primarily by national experts and national consulting firms. An international expert will assist in CP finalization. It is hoped that the CP would be completed and approved by the Government in time for presentation to the Eighth Meeting of the Executive Committee in October 1992. Training activities are ongoing and will be completed by end-1992. A microcomputer system has been acquired and an ODS data base is being set up and managed.

BRAZIL

Brazil will participate in most of the sectoral activities implemented by UNDP in 1992. Arrangements for a demonstration programme to improve domestic refrigerator servicing and CFC recycling in service shops are being discussed.

CHILE

Chile will participate in most of the sectoral activities implemented by UNDP in 1992. Arrangements for a demonstration programme for service center technicians on CFC venting and leakage from refrigerators during operation and servicing are being discussed.

CHINA

UNDP is the lead agency for CP preparation. The Government has established a Leading Group for Ozone Layer Protection whose responsibilities include implementation of Montreal Protocol work programmes. The leading Group comprises:

Lead: National Environmental Protection Agency (NEPA)
Members: Ministry of Commerce (MOC)
Ministry of Light Industry (MLI)
Ministry of Public Security (MPS)
Ministry of Aeronautics and Aerospace (MAA)
Ministry of Chemical Industry (MCI)
Ministry of Machinery and Electronics Industry (MMEI)
State Science and Technology Commission (SSTC)
Ministry of Finance (MOF)
Ministry of Foreign Economic Relations and Trade (MOFERT)
Ministry of Foreign Affairs (MFA)
State Planning Commission (SPC)
Customs Bureau

Eight technical subsector Working Groups report to the Leading Group, covering aerosols, chemical substitutes, foams, halons, ODS recycling and recovery, refrigeration/airconditioning/MAC, refrigerator manufacture, and solvents.

UNDP, under its own programme (CPR/89/029: Ozone Protection in China) and with financial assistance from Finland, sent a 9-member expert team to China during November-December 1991 to specify and formulate investment programme feasibility studies to phase-out ODS in each subsector. The draft mission report was submitted in February 1992 and the final report was submitted in May 1992. This has formed the basis of all follow-up action programmes.

The first national CP workshop was held in Beijing during 1-4 June 1992. There were approximately 50 participants including over twenty national experts. It was chaired by Mr. Wang Yangzu, Deputy Administrator, NEPA. The deputy chair was Prof. Tang Xiaoyan, Director, Center of Environmental Sciences, Peking University, which has been appointed by NEPA as coordinating agency to assist in CP preparation. All Leading Group members were represented and all Working Groups made presentations. UNDP was represented by Messrs. Frank Pinto and Clinton

Norris. The Fund Secretariat was represented by Chief Officer, Dr. Omar El-Arini. The World Bank was represented by Messrs. Donald Brown and Bill Rahill. Four consultants who had worked on the UNDP study and were assisting the World Bank in its investment project preparation mission, provided subsectoral advice on aerosols, halons, refrigeration and policy aspects.

The Chief Officer, UNDP and the World Bank made presentations on their respective roles/work programmes, on project implementation and on CP preparation. The Chief Officer and the World Bank discussed the definition and calculation of incremental costs; as these two presentations differed and since this matter will be considered by the Executive Committee at its Seventh Meeting, it was agreed that NEPA would be informed on the methodology/calculation of incremental costs as approved by the Executive Committee.

The presentations made by the eight technical Working Groups were excellent and comprehensive. While the UNDP report had forecasted ODS sectoral production and consumption to 1996, the Working Groups extended the analysis to 2005 and in some cases to 2010. Presentations made by the State Planning Commission, the State Science and Technology Commission and the Ministry of Finance showed that while work on technical issues was progressing, unified interagency positions and plans regarding policy, technology transfer and financial issues were yet unresolved.

A meeting on financing was held on 3 June, chaired by Mr. Wang, who strongly urged implementing agencies to speed-up project approval, financial disbursements and project implementation procedures. This is all the more essential since estimated 1992 ODS consumption will be around 60,000 tonnes.

During 5-9 June, Dr. El-Arini, Mr. Pinto and Mr. Norris, accompanied by a NEPA representative, travelled to Hangzhou and Shanghai and inspected ODS use and phase-out plans covering fire protection equipment, chemical plants and aerosol facilities. ODS reduction plans were discussed with enterprises, research and technology institutes and local government officials.

On 10 June, a final meeting convened by Mr. Wang was attended by Dr. El-Arini, UNDP, the World Bank, and NEPA representatives. The following decisions (relevant to UNDP activities) were agreed upon:

- a) The second CP workshop would take place during 17-21 August in Beijing organized by NEPA with the assistance of UNDP. NEPA has estimated that an additional allocation of US\$ 35,000 would be required for CP completion. UNDP was requested to include this financial request in its progress report to the Executive Committee.
- b) The CP would then be finalized by mid-September by NEPA and UNDP, with the assistance of the World Bank. Final Government approval is expected by end-September. The CP would be transmitted to the

Fund Secretariat on 1 October 1992 for circulation to Executive Committee members. Two Government representatives (one financed by the Fund Secretariat and one by UNDP) would be invited to attend the Eighth Meeting of the Executive Committee to present the China CP.

- c) UNDP, in its progress report to the Executive Committee, will request consideration and approval of the two solvents demonstration projects: Dalian Precision Parts Cleaning Line (\$450,000) and Dandong Electronic Tuner Cleaning Line (\$470,000). The results would be essential to wider application of these technologies all over China. These two project descriptions are attached as Annex 1.
- d) It was agreed that NEPA and UNDP would start-up, in July 1992, the information clearinghouse at NEPA as already approved under the UNDP work programme.
- e) NEPA has requested minor modifications in UNDP's sectoral 1992 work programme in China. These are being incorporated and these activities should commence in July 1992.

COSTA RICA

The ODS reconnaissance study has almost been completed by the national consulting firm, CEMSO S.A. As budgeted, a regional consultant will be sent in mid-July to review the results and to assist the Government in the preparation of the country programme which should be completed and approved by the Government in time for presentation to the Eighth Meeting of the Executive Committee in October 1992.

ECUADOR

Ecuador will participate in most of the sectoral activities implemented by UNDP in 1992. Arrangements for a CFC refrigeration conservation and material handling training programme are being discussed.

EGYPT

Two study tours have been completed, the first an ozone policy study tour comprising industry, EEAA, finance and legislative members in November 1991, and the second a technical study tour on refrigeration and air-conditioning in February 1992. The Executive Committee at its Sixth Meeting (27-28 February 1992) approved, at the request of the Government of Egypt, \$1.5 million for UNDP to assist Egypt in the evaluation of the technical and economic potential and preparation of three investment projects covering:

- a) Recovery and phasing-out of ODS in foam production at Taki Vita Company;
- b) Technology transfer and using non-ODS substances in foam production at the Al-Sherif Plastic Factories; and
- c) Phasing out CFCs in domestic refrigeration at Ideal Manufacturing Company.

To obtain and evaluate needed technical details prior to a full-scale investment project formulation mission, UNDP sent a 2-person team to Cairo during 19-22 May for discussions with EEAA and with technical representatives at the three factories. UNDP specified additional preparatory needs and jointly with EEAA modified the scope of the projects. The full investment project preparation mission will take place in July 1992. It is expected that investment project preparation will be finalized by mid-September for presentation to the Eighth Meeting of the Executive Committee in October 1992.

During 27 May - 4 June, UNDP received from EEAA two additional projects for incorporation into its work programme:

- 1) The phasing-out of 100 tonnes per year of CFC-11 at Misr Foam Company through the use of methylene chloride, a widely used blowing agent for flexible foams (estimated cost \$250,000). A significant part of the conversion cost is allocated to installing emissions control equipment to meet national worker exposure safety standards. UNDP will review the scope, safety issues and conversion costs of this project.
- 2) A second project seeks to replace 30 tonnes of CFC-11 per year at Technopol Egypt Company by using non-CFC alternatives as well as recovery of CFC-11 from foam waste (estimated cost \$250,000). UNDP will review technical and other details with the company and EEAA to determine technical and economic viability.

It is proposed that UNDP fund the above two new project preparation requests from the \$1.5 million allocated to UNDP for investment project formulation at the Sixth Meeting. Executive Committee approval is requested.

GHANA

UNDP's work programme comprises establishment of a demonstration shop/programme to teach correct servicing procedures to refrigeration/air-conditioning service technicians. It is expected that the demonstration programme will be operational in September 1992.

IRAN

The first mission by the UNDP consultant took place during 20 April to 5 May 1992. Working with national counterparts in the Department of the Environment and with two national experts from Tehran University, the ODS reconnaissance study methodology was finalized and data collection initiated. A draft CP outline was also prepared.

The second mission by the UNDP consultant took place during 24 May to 4 June 1992. The ODS consumption data base was finalized and a draft CP was completed. What is left is identification of priority technical assistance and investment projects for incorporation in the CP. These have to be incorporated into the draft CP. Following a review by UNDP

headquarters, the draft CP would be submitted to the Government for formal approval and transmittal to the Executive Committee. The Iran CP would be presented to the Eighth Meeting of the Executive Committee in October 1992, and should be received by the Fund Secretariat by mid-September 1992.

JORDAN

The UNDP technical assistance mission ended in February 1992 and comprised an industrial training specialist and a chemical process engineer. The training specialist report covers relevant ODS sectors in Jordan (aerosols, foams, refrigeration, halons) and the training options specified include technical workshops, study tours and demonstration programmes. The chemical process engineer, following plant visits, recommended technical solutions for process engineering problems encountered in the refrigeration/airconditioning, foams, aerosols and fire-extinguishing sectors including the use of ODS alternatives or substitutes.

The chemical process engineer will be sent in July 1992 to conduct a feasibility study on deodorization of local gas for use as a CFC substitute in cosmetics production. His mission will be closely coordinated with the World Bank investment project in this area.

KENYA

UNDP's work programme comprises establishment of a demonstration shop/programme to teach correct servicing procedures to refrigeration/air-conditioning service technicians. It is expected that the demonstration programme will be operational in September 1992. UNDP is also the lead agency assisting Kenya in preparation of its country programme. Operational details are being finalized.

MALAYSIA

Since the World Bank is to assist the Government of Malaysia implement the two approved investment projects (MACs recycling, halons control/recovery/ recycling), UNDP will allocate the \$50,000 training funds component towards the overall training component of these two projects.

MEXICO

UNDP is assisting SEDUE in formulating the detailed terms of reference (in both Spanish and English) for the eleven projects identified in the Country programme. The national consultant has been selected and is expected to start work by end-June 1992. Details of the halons inventory and revision of current standards are being discussed.

NIGERIA

A joint UNDP/UNEP two-day workshop for 40 industrialists who use ODS in their manufacturing processes is tentatively scheduled for the last quarter 1992. Details remain to be finalized.

PHILIPPINES

UNDP and the Dept. of Environment and Natural Resources finalized a contract with a national NGO (Likhaan Institute Foundation) to: (a) run a national technical workshop on alternative and innovative solutions to ODS problems; and (b) conduct a series of regional ODS training/demonstration courses for service technicians in the refrigeration/air-conditioning sector focussing on correct servicing and maintenance procedures. A national ozone policy expert has been recruited to provide the necessary guidance. The training programme started in June 1992 and will run through end-1992. An international refrigeration training specialist would be sent in July on a short training mission.

SRI LANKA

UNDP is the lead agency for the ODS reconnaissance study and preparation of the CP. Following communications with the Government, detailed proposals have been received for implementation of the ODS reconnaissance survey and formulation of the CP by national experts. UNDP is finalizing organizational and administrative arrangements for national execution of these two activities. It is expected that the ODS reconnaissance survey will start in July 1992 and that the country programme would be finalized by December 1992.

THAILAND

Several national staff have attended international CFC meetings and conferences. A national expert has been recruited as environmental engineer in the Ministry to technically review and monitor all issues and activities in Thailand dealing with Montreal Protocol programme implementation (UNDP, UNEP, World Bank, bilaterals). A microcomputer system has been acquired to connect to OZONET and to support development of a national ODS data and policy information system. Other training programmes will be completed by end-1992.

TRINIDAD & TOBAGO

UNDP is the lead agency assisting the Government in CP formulation. While detailed arrangements have yet to be finalized, it is possible that the CP could be ready for presentation to the Executive Committee at its Eighth Meeting in October 1992.

TURKEY

Turkey will participate in most of the sectoral activities implemented by UNDP in 1992. Arrangements are being discussed.

URUGUAY

A two-week consulting mission will be implemented in third-quarter 1992.

VENEZUELA

UNDP is supporting the National Seminar on CFC Usage in Air-conditioning Systems: Alternatives to Reduce or Substitute this Usage. It will be held during 15-19 June and will comprise two parts: a

two-day seminar during 15-16 June in Caracas and a two-day seminar during 18-19 June in Valencia. At each seminar, around 100 service technicians will be trained in servicing techniques and in methods to reduce the use of CFCs. Properties of various substitutes will be discussed. In addition to guest speakers from the Ministry of External Affairs and the Ministry of the Environment, there will be two Mexican lecturers from the refrigeration industry in Mexico and one Venezuelan refrigeration specialist. The seminar is being video-taped for use in other training courses in Latin America.

B. SECTORAL AND OTHER ACTIVITIES

Aerosols

UNDP is in the process of finalizing recruitment of the sector expert, Mr. Gino Nardini of Mexico, who is also the sector expert used by the World Bank. He would provide technical support for aerosols demonstration projects and prefeasibility studies in all regions.

Mobile Air Conditioning (MAC)

It is proposed, for both cost and efficiency purposes, to use a sector expert rather than develop formal arrangements with either the Mobile Air Conditioning Society or the Society of Automotive Engineers. The sector expert would maintain close contact with the above bodies. The regional MAC demonstration programmes in Latin America, the Middle East and Asia are planned for second-half 1992.

Commercial/Industrial Centrifugal Chillers and Industrial/Domestic Refrigeration

Since UNIDO has some expertise in this area, this sectoral programme would be implemented by UNIDO rather than by UNDP's Office of Project Services. UNDP has had ongoing discussions with the International Institute of Refrigeration (IIR) in Paris for over six months. We now understand that the IIR office in Paris is primarily a "mail-drop" comprising only a director and an assistant. Thus any formal arrangement with IIR to execute workshops and other activities would be transferred to IIR affiliates in other countries. This would result in a doubling of administrative procedures and costs. IIR has also indicated that it would need double the funds set aside for the sector agency retainer agreement. It is therefore proposed that UNIDO implement these activities directly using experts from IIR affiliates as well as other experts as needed. Arrangements are being finalized between UNDP and UNIDO.

Four of the proposed six regional demonstration would be held by end-1992. UNDP is coordinating closely with USEPA in the joint USEPA/Mexico chiller servicing training workshops and hopes to use those training materials in other countries in Latin America. Demonstration/training programmes in Brazil, Chile, China and Ecuador will be implemented in second-half 1992.

Foams

UNDP is evaluating the qualifications of several flexible and rigid foam experts in order to set-up sector expert agreements. Two of the three regional "low-CFC foam" demonstration programmes would be completed by end-1992. The three technical assistance projects in China would also be completed by end-1992.

Solvents

UNDP is evaluating the qualifications of several solvents cleaning experts in order to initiate sector expert agreements. Close contact is being kept with ongoing solvents projects in Mexico and Thailand. Interested developing countries would receive technical support/advice on demonstration and other projects. The feasibility study in China is expected to be concluded by end-1992.

Halons

UNDP is evaluating the qualifications of several halons experts and may use more than one to provide needed technical assistance to interested developing countries. It is expected that the two regional demonstration programmes in Latin America and the Middle East will be completed by end-1992. The halons inventory and standards review in both China and Mexico would be completed as scheduled.

To ensure the rapid and effective follow-up to the above regional demonstration programmes, USEPA has proposed that UNDP include in its sectoral work programme provision for acquisition of 40 halons recycling machines at a concessional cost of \$5,200 each. It is intended to make available one machine for each country participating in the workshops. Workshop participants would be trained in the use of these machines and halons recycling could take off rapidly. If acceptable to the Executive Committee, UNDP would request \$250,000 under this sectoral programme to cover the cost of the machines, transport, insurance and other costs.

ODS Phase-out Policy Development and Investment Promotion

This incorporates: (a) three national workshops for policy-makers and industry representatives; (b) two brief study tours for officials and industry representatives; and (c) participation of key developing country nationals in demonstration workshops and at regional/international technical meetings. These activities are being implemented on an ongoing basis.

UNDP is also assisting China's National Environmental Protection Agency develop the approved information clearing house for ozone layer protection.

UNDP Headquarters Technical Support and Programming

Effective 27 April 1992, Mr. Clinton Norris joined UNDP as Consultant in CFC Utilization and Replacement Technologies. He is a chemical engineer who was with DuPont for 30 years. He has managed

plants, improved manufacturing processes and product quality, and has led environmental activities at polymer and fluorochemicals manufacturing facilities. He has supervised both managerial and technical staff in dealings with CFC-using customers in the refrigeration, foams, solvents, aerosols and fire-extinguishing areas, and most recently managed DuPont's CFC solvent and replacement business worldwide.

Effective 26 May 1992, Ms. Cecilia Corpus assumed the position of Principal Administrative and Programme Assistant for the Montreal Protocol Trust Fund.

In addition to overall programme monitoring and project backstopping, UNDP headquarters staff undertook the following activities:

- a) Mr. Pinto had technical discussions with USEPA staff in Washington D.C. on 24 April 1992.
- b) Messrs. Pinto and Norris represented UNDP and discussed work programme implementation at the UNEP Regional Workshop on the Implementation of the Montreal Protocol (12-15 May 1992, Caracas). Discussions were held with country representatives and with non-Parties (eg. Bolivia, Colombia).
- c) Messrs. Pinto and Norris undertook a review mission to Cairo to determine initial technical assistance requirements for preparation of three CFC phase-out investment projects (19-22 May 1992).
- d) With UNDP as lead agency, Messrs. Pinto and Norris helped conduct and substantively contributed to the first national workshop for preparation of China's country programme under the Montreal Protocol (1-4 June 1992, Beijing). During 5-9 June, together with Dr. El-Arini and a NEPA representative, they travelled to Hangzhou and Shanghai and inspected ODS use and phase-out plans covering fire protection equipment, chemical plants and aerosol facilities. ODS reduction plans were discussed with enterprises, with research and technology institutes and with local government officials. Follow-up meetings with NEPA and the World Bank were held during 10-11 June.

Activities planned over the next several months include:

- e) Participation at the Seventh Meeting of the Executive Committee (23-26 June 1992, Montreal).
- f) A one-week investment project preparation mission to Egypt in July 1992.
- g) Second national workshop for the preparation of the China country programme (17-21 August 1992, Beijing).
- h) Speak at the panel on World Business Opportunities at the International CFC and Halon Alternatives Conference (29 Sept.- 1 Oct. 1992, Washington, D.C.).
- i) Participation at the Eighth Meeting of the Executive Committee (October 1992, Montreal).
- j) Participation at the Open-ended Working Group of the Parties and the Fourth Meeting of the Parties to the Montreal Protocol (November 1992, Copenhagen).
- k) Attend implementing agency coordination meetings as scheduled.

C. CONCLUSIONS AND SUMMARY OF REQUESTS FOR EXECUTIVE COMMITTEE APPROVAL

While UNDP's country-specific work programmes are proceeding satisfactorily, there have been some problems determining the most effective mechanism to implement sectoral programmes. These problems are being ironed out. In general, formal administrative arrangements with societies/institutes will not be utilized. A more flexible and lower-cost option being followed is to appoint sectoral experts and have them keep in close contact with key professional societies/institutes, using their expertise where appropriate.

Summary of Programme Funding Requests for EC Approval

	<u>US \$</u>
a) <u>China</u> : additional costs for country programme preparation (from \$150,000 to \$185,000)	35,000
b) <u>China</u> : Dalian Precision Parts Cleaning Line demonstration project	450,000
c) <u>China</u> : Dandong Electron Tuner Cleaning Line demonstration project	470,000
d) <u>Egypt</u> : Phasing-out of 100 tonnes/year of CFC-11 at the Misr Foam Company (project preparation to be funded from UNDP's \$1.5 million project preparation advance for Egypt)	-
e) <u>Egypt</u> : Replacing 30 tonnes/year of CFC-11 at the Technopol Egypt Company (project preparation to be funded from UNDP's \$1.5 million project preparation advance for Egypt)	-
f) <u>Halons</u> : Acquisition/transport of 40 halons recycling machines, one for each country participating at halons demonstration workshops	250,000
Total	<u>1,205,000</u>

(WPLAN5C)

ANNEX 1: CHINA - INCLUSION OF TWO SOLVENTS DEMONSTRATION PROJECTS IN UNDP'S 1992 WORK PROGRAMME

COUNTRY OR REGION:	China
SECTOR COVERED:	Electronics and Metal Cleaning
ODS CONSUMPTION IN AFFECTED SECTOR	1,300 Tonnes CFC-113 600 Tonnes Methylchloroform -1991
PROJECT TITLES:	1) Dalian Precision Parts Cleaning Line 2) Dandong Electronic Tuner Cleaning Line
DURATION:	Two Years
IMPACT:	1) 130 Tonnes of CFC phased-out applied elsewhere to metal parts mfr. 2) 25 Tonnes of CFC phased-out applied elsewhere to electronic tuner mfr.
PROPOSED ODS GRANT:	1) Dalian - \$450,000 2) Dandong - \$470,000
NATIONAL COORDINATING AGENCY:	Ministry of Machines and Electronics Industry
IMPLEMENTING AGENCY:	UNDP

PROJECTS SUMMARY

Both projects are aimed at demonstrating feasibility of aqueous based processes as substitutes to fluorinated/chlorinated solvents. The DALIAN and the DANDONG factories will work with experts and their cleaning process equipment supplier to identify an appropriate non-CFC alternative cleaning process. The DALIAN Factory was selected as a demonstration site because electronic guns require the most thorough cleaning of all precision metal parts manufactured in China, and DALIAN is one of the largest CFC-113 consumers. It is anticipated that a successful demonstration could be used at some of the 20 other factories producing similar products, and at some of the 200 other enterprises making electrovacuum and semiconductor components and devices.

The Dandong Factory has been investigating alternative (aqueous) systems for its cleaning operations, and is well positioned to demonstrate a non-CFC tuner cleaning technology for other electronic tuner producers in China. There are 20 similar manufacturers in China and 300 factories producing electronic components for broadcasting and communication equipment.

The China Electronic Engineering Design Institute (CEEDI) of the Ministry of Machine and Electronics Industry (MMEI) is responsible for planning and execution of the phase-out of ODS in China in electronic industries. The Institute expects that these demonstration projects will lead to the rapid conversion of other manufacturing companies to non-CFC cleaning processes.

2 DEMONSTRATION PROJECTS - CHINA

DALIAN PRECISION PARTS CLEANING LINE **DANDONG ELECTRONIC TUNER CLEANING LINE**

1. Sector Background

In 1992, an estimated 1,300 tonnes of CFC-113 and 600 tonnes of Methyl Chloroform were consumed in China. While this is the smallest ODS sector, it has substantial growth (nominally 20% per year) and, left unrestricted, 1996 consumption has been forecasted to be 3,400 tonnes of CFC-113 and 1,600 tonnes of Methyl Chloroform. While some commercial scale alternative, non-CFC processes are available, these substitute technologies are essentially unknown in China. Demonstration projects will show commercial viability and where the alternatives processes can be successfully applied.

2. Objectives

- ▶ Identify non-CFC cleaning processes for these two applications.
- ▶ Demonstrate process feasibility by converting the factories to the new processes.
- ▶ Promote the new processes so that their use is spread to other appropriate applications.

3. Project Description

These two demonstration projects will include the following scope:

- (1) Work with cleaning experts and suppliers (Toshiba & Matsushita) to identify candidate non-CFC processes.
- (2) Work with the No. 2 Electronics Cleaning Process Research Institute of MMEI to screen the alternative processes, and identify and verify the appropriate candidates.
- (3) Order, install and startup the alternative technology at the selected sites.
- (4) Run in parallel to demonstrate quality requirements and range of capability; then shut down the ODS consuming processes and reduce 130 tonnes per year of consumption.
- (5) China Electronics Engineering Design Institute will oversee the transfer of the alternative technology to China's other factories where impact is directly applicable (30 to 40 sites). Then the effort will be focused to the other 400 sites, where the alternative processes can be applied - either directly or in modified form.

4) Project Costs (Estimated, \$Thousand)

	<u>Dalien</u>	<u>Dandong</u>
<u>Local</u>		
Development, Training Trials	130	170
<u>ODS Grant</u>		
Machinery & equipment, Training, Trials	<u>450</u>	<u>470</u>
Total	580	640

5. Project Implementation

Under overall UNDP implementation responsibility, NEPA and MMEI'S Service and Technology Department will be responsible for the successful completion of these projects. Each of the factories will execute their respective projects at their factories. The China electronics Engineering Design Institute (CEEDI) of MMEI is in charge of planning and executing the ODS phase-out in China's electronics and metal parts cleaning industries. CEEDI will oversee the demonstration of the alternative technologies at the factories and will coordinate the transfer of the technology to other ODS users. Two design institutes - No2 and No46, will provide technical support to the factories.

ANNEX 2: EGYPT - APPRAISAL OF TWO INVESTMENT PROJECTS

COUNTRY OR REGION:	Egypt
SECTOR COVERED:	Primary Sector: Foam
ODS CONSUMPTION IN AFFECTED: SECTORS	100 tonnes of CFCS
PROJECT TITLE:	Misr. Foam Co. Project for Phasing out about 100 Tonnes of CFC 11 per year.
PROJECT DURATION:	Four months
PROJECT IMPACT: ODS REDUCTION	Reducing CFC consumption by 100 tonnes per year
PROPOSED BUDGET:	\$250,000
IMPLEMENTING AGENCY:	UNDP
NATIONAL COORDINATING AGENCY:	Egyptian Environment Affairs Agency (EEAA)

PROJECT SUMMARY

Egypt has developed a national country programme for the phase-out of ozone depleting substances. Two key elements of that programme involve reducing CFC's from the foam sector and the refrigerant sector. Misr Foam Company is an Egyptian partnership company located at the industrial zone in 6th October City. It has three productive factories: Foam Factory (max productivity 250 tons monthly); Car and bus seats factory (max production 4,000 seats monthly); and Expanded Polystyrene Factory (max production 5,500 sqm. monthly). Under this project the company would phase out about 100 tonnes of CFC 11 per year in the manufacture of foams and introduce a widely used, non ozone-depleting substitute, Methylene Chloride.

PROJECT OF THE GOVERNMENT OF EGYPT

**MISR FOAM CO. PROJECT FOR PHASING OUT ABOUT
100 TONNES OF CFC 11 PER YEAR**

1. Sector Data

Two basic types of foams are used in Egypt: polyurethane for cushioning, insulation and special automotive applications; and polystyrene for insulation and food packaging. CFC's have been used as blowing agents where their properties make them useful for removing the heat of the foaming reaction and for forming the bubbles required. It is estimated that 722 tonnes of CFC 11 were used in 1991 for foam manufacture.

2. Project Description

One of the major uses of CFCs in Egypt is the manufacture of foams. The Government of Egypt, in its country programme for the phase-out of ozone-depleting substances, includes the reduction and recovery of CFC-11 from manufacture as a key element in its action strategy and also includes the use of suitable substances as substitute to CFC 11.

This project, at one of the MISR foam producing factories aims to phase out about 100 tonnes of CFC 11 per year used in sponge manufacturing by using Methylene Chloride as a substitute.

3. Project Activities

One problem foreseen in the use of the substitute is the toxicity during handling and preparaton, therefore the following will be done during the process of substitution:

- a) renewing the surrounding air during sponge manufacturing to get rid of the inherent vapours from the operation and
- b) improving handling and safety tools

4. Project Budget

(Preliminary Estimate)

Main System	\$133,300
Safety Tools	45,465
Factory Preparing	18,000
Training	<u>53,235</u>
Grand Total	\$250,000

COUNTRY OR REGION:	Egypt
SECTOR COVERED:	Primary Sector: Polyurethane Foams
ODS CONSUMPTION IN AFFECTED SECTORS:	30 tonnes of CFC 11
PROJECT TITLE:	Technopol Phasing-out CFC 11
PROJECT DURATION:	Six Months
PROJECT IMPACT: ODS REDUCTION	30 Tonnes per year
PROPOSED BUDGET:	\$400,000
IMPLEMENTING AGENCY:	UNDP
NATIONAL COORDINATING AGENCY:	Egyptian Environment Affairs Agency (EEAA)

PROJECT SUMMARY

Technopol Egypt Company is responsible for moulds and polyurethane technology at the 10th of Ramadan City. It runs different types of moulding goods such as Rigid foams for furnitures, RIM foams for car bumpers and spoilers, Self Skinning foams for car wheels and head rests, Cold Cure for car seats and sound insulators.

The system consumes CFC 11 as a blowing agent to promote the polymerization reaction (30 tonnes per year). Under this project the company would phase out about 30 tonnes of CFC 11 per year by using new alternatives (non ODP), plus recovery of CFC 11 from the foam waste.

UNDP will review technical and other details with both EEAA and the company to determine technical and economic viability. It is proposed that UNDP fund this activity from the \$1.5 million already allocated to it for investment project preparation formulation at the Sixth Meeting.

PROJECT OF THE GOVERNMENT OF EGYPT

TECHNOPOL PHASING-OUT CFC 11

1. Sector Data

The two basic types of foam are used in Egypt: polyurethane for cushioning, insulation and special automotive applications; and polystyrene for insulation and food packaging. CFC's have been used as blowing agents where their properties make them useful for removing the heat of the foaming reaction and for forming the bubbles required. It is estimated that 722 tonnes of CFC 11 were used in 1991 foam manufacture.

Technopol Egypt Company has run a polyurethane moulding goods factory since 1986 for production of various furnitures and automotive parts. This project will eliminate the use of 30 tonnes per year of CFC- 11 by using alternative substances.

2. Project Description

One of the major uses of CFC-11 in Egypt is in the manufacture of foams. The Government of Egypt, in its country programme for the phase-out of ozone-depleting substances, includes the reduction and recovery of CFC-11 from foam manufacture as a key element in its action strategy. This project, by facilitating the reduction and recovery of CFC 11 from foam manufacture will help Egypt meet its ODS phase-out targets under the provisions of the Montreal Protocol, thereby contributing to the global reduction of ODS.

Project activities involved are:

- Training for new technology
- Adapting the new technology needed for new alternatives
- recovery of CFC 11 from the waste

The Bayer Company will be assisting on some of the technical aspects of this project.

3. Project Budget**Estimated Budget for the Project**

<u>Item</u>	<u>Proposed Budget</u>
Equipment	\$300,000
1- modified dryers	
2- modified coolers	
3- modified chillers	
4- modified mould heaters	
5- modified mixing heads	
6- waste grinding machine	
7- recovery and reshaping system	
8- devices and apparatuses for testing polyurethane materials	
Training	50,000
Experts	<u>50,000</u>
Grand Total	\$400,000