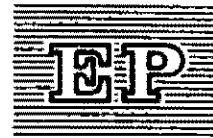




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Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Ninth Meeting
Montreal, 8-10 March 1993

1993 UNIDO WORK PROGRAMME

This document includes:

- **Comments and recommendations from the Fund Secretariat**
- **1993 UNIDO Work Programme**

**COMMENTS AND RECOMMENDATIONS
FROM THE FUND SECRETARIAT
ON THE 1993 UNIDO WORK PROGRAMME**

1. The Executive Committee approved the agreement with UNIDO at its 8th Meeting and invited UNIDO to present its work programme to the Ninth Meeting of the Executive Committee. UNIDO has carried out extensive consultations with the Secretariat, UNDP, UNEP and the World Bank in the course of the preparation of the 1993 work programme with a view of close co-ordinating its activities.
2. The 1993 UNIDO Work Programme contains comprehensive description of the qualifications of this new implementing agency, general and sectoral-based strategy for 1993 activities, work programme implementation modality, planned activities, expected outcome and budget summary.
3. Two phase out project cycles are proposed in the work programme. The first is the preparation and appraisal of investment project proposals which usually do not exceed six month and the second actual phase out implementation at the plant level within the time-frame specified in the investment project document. Output of current work programme will be plant oriented investment project proposals specifying incremental costs and modality of phase out activities.
4. During the time between the 8th meeting of the Executive Committee and the beginning of February 1993, UNIDO identified investment project preparation activities in five Article 5 countries totalling US \$491,550. This sum includes agency support costs at US \$56,500 representing thirteen per cent of the total programme activities.
5. The following activities are proposed for approval and funding:

	US \$
Development of a strategy for refrigeration and foam sector, and preparation of investment projects in refrigeration and foam sectors in Egypt.	100,000
Preparation of investment projects in refrigeration in Syria.	35,000
Preparation of investment project in foam and solvent sector in China.	160,000

Preparation of investment projects in foam sector in Brazil.	150,000
Preparation of investment projects in domestic refrigeration sectors in Iran	0*
Total	<u>435,000</u>
Support costs	56,500
Total request	<u>491,550</u>

6. The detailed information in respect of each project are included in the project outlines attached to the work programme.

7. The proposed activities are prepared in co-ordination with UNDP, UNEP and the World Bank.

SECRETARIAT RECOMMENDATIONS

8. The Secretariat recommends UNIDO's 1993 Work Programme and associated budget (\$491,550) for approval.

9. The Secretariat recommends also to approve transferral of US \$50,000 plus support costs to UNIDO for preparation of investment projects in the domestic refrigeration sector in Iran from US \$113,000 allocated to UNDP for project preparation in Iran.

* If approved, US \$50,000 plus support costs will be transferred to UNIDO for preparation of investment projects in the domestic refrigeration sector in Iran, from US \$113,000 allocated to UNDP for project preparation in Iran at the 8th Meeting of the Executive Committee.



1993 WORK PROGRAMME

OF THE

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Prepared for Presentation to

**The Ninth Meeting of the Executive Committee of the
Multilateral Fund for the
Implementation of the Montreal Protocol**

29 January 1993

I. INTRODUCTION

The agreement between UNIDO and the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol was signed at the Eighth Meeting of the Executive Committee (19-22 October 1992, Montreal). UNIDO was invited to commence discussions with UNDP, UNEP and the World Bank with a view to coordination, and to present its work programme to the Ninth Meeting of the Executive Committee.

The mandate of UNIDO is to promote industrial development in developing countries by implementing technical assistance and industrial training, exchanging information, and promoting industrial investment, national and regional planning and technology transfer. UNIDO main actions in the context of the Multilateral Fund will be in the execution of investment and technical cooperation projects. Field projects are one of the most important activities of UNIDO. For example, in 1991, it executed 824 projects at a total cost of US\$ 147.5 million. UNIDO provides experts, equipment and training that might not otherwise be available to developing countries.

The UNIDO Work Programme for phasing out ODS is based on Country Programmes already formulated. UNIDO has discussed with the Fund Secretariat and the other implementing agencies its role as the fourth implementing agency of the Fund. On the basis of these discussions, UNIDO will concentrate, within the framework of the Multilateral Fund, on providing support services at the plant level. This involves a wide range of technical assistance tasks in assessing options such as retrofitting, maintenance, recycling, training of technical personnel and plant managers, etc. Therefore, by concentrating on the individual industrial plants, by providing specific technical inputs and undertaking technical assessments, UNIDO will provide a basis on which appropriate investment projects, institutional building activities, policy incentives and regulatory frameworks could be identified, formulated and adopted in order to promote the implementation of the Montreal Protocol.

The main target for the UNIDO Work Programme will be projects related to the Article 5 countries for which country programmes have been, or are being, formulated by other implementing agencies. UNIDO will develop, design and implement project proposals in refrigerants, solvents, and foams in close cooperation with the other agencies implementing similar and/or complementary projects.

II. QUALIFICATIONS

UNIDO's experience in project implementation ranges from large-scale projects to medium- and small-scale projects. Its experience indicates that the implementation of small- and medium-scale projects requires particular emphasis on involving associations of manufacturers, trade associations, small-scale industry institutes, opinion-leaders, etc. Furthermore, UNIDO's technical assistance activities in these projects benefit from closely involving local technical and managerial personnel.

UNIDO's in-house technical staff deals with technologies in which ODS are used, and possess the necessary knowledge related to ODS and their chemical substitutes (already existing and/or in the research, development or testing phase). Ample opportunities are provided to its professional staff for in-house* and external training in order to keep abreast of the latest technological and methodological developments, including the latest developments in R&D for ODS phase-out. For example, UNIDO has organized a training workshop for its staff in Detroit in February 1993, in cooperation with Polymer Technologies, Inc., a subsidiary of the University of Detroit.

UNIDO can manage ODS-reduction projects from identification through appraisal to implementation and follow-up. On average, project implementation commences within six months after financial approval by the funding agency (i.e. the Executive Committee in the case of the Multilateral Fund).

UNIDO's implementation activities are facilitated by its field representation in 40 developing countries. It has established a network of Country Director Offices staffed by a UNIDO Country Director (UCD) and a Junior Professional Officer (JPO). In 20 countries, UNIDO is represented by a JPO working from the UNDP field office. UNIDO is also represented in all developing countries by the UNDP Resident Representative/United Nations Resident Coordinator. Together, they assume responsibility for neighbouring countries and thus serve a total of 124 countries. Furthermore, many UNIDO technical assistance projects and activities result in investment projects.

UNIDO has a network of nine - soon to be increased to eleven - Investment Promotion Services offices in different countries across the globe, mainly in industrialized countries. In 1991, nearly US\$900 million of investment projects were promoted through these offices. These offices serve as important intermediaries between enterprises and industrial associations in the developed and developing countries.

In addition to its in house expertise, UNIDO has ready access to international experts and private sector companies/NGOs who could support the implementation of the Montreal Protocol on a practical level. UNIDO's roster contains 4,300 experts from developing countries and 8,400 experts from developed countries. UNIDO can mobilize developed country expertise on a focused basis in order to support developing country industry.

UNIDO has expertise in using a variety of financial and funding mechanisms. For example, in 1991, funds for UNIDO projects came from the UNDP/Indicative Planning Figure (IPF), 37%; the Industrial Development Fund (IDF), 21%; various trust funds, 31%; the UNIDO regular budget, 2 %; and others, 9%.

UNIDO has conducted a series of Industry Meetings and technical workshops on Phasing Out Ozone-Depleting Substances since 1990. Emphasis has been placed on the widest possible dissemination of results to developing countries.

* Supported by contribution from Nordic countries

Besides UNIDO's experience in large-scale projects, it is also experienced in fostering the growth of small- and medium-scale industries (SMIs). UNIDO has a programme for SMIs to enhance their contribution to industrialization within the framework of the overall economic and social development goals of developing countries. In the field of SMIs, assistance is integrated at three levels: (a) policy; (b) institution; and (c) enterprise. At the enterprise level, the main thrust of the programme for SMIs is to assist small industries in gaining greater access to resources and information. This entails the provision of advisory services and technical and training support to SMIs in entrepreneurship and management, in product development and technology upgrading, in marketing services and in total quality management for both new and established small enterprises.

III. GENERAL STRATEGY FOR 1993 WORK PROGRAMME

Scope of activities

UNIDO will assist in the implementation of country programmes either under preparation or already prepared by UNEP, UNDP and the World Bank. Based on these country programmes and on requests received from the respective governments, specific projects will be formulated and implemented by UNIDO, following a sectoral approach, i.e. each project will deal with specific sector, for example, foams, solvents, fumigants, refrigerants, aerosols, halons, etc. For each sector, in-house expertise is available. UNIDO's approach will concentrate on:

- i) Replication of experience gained through demonstration and training projects;
- ii) Application of technology options which are immediately available for transfer;
- iii) Identifying and focusing on the most cost effective options; and
- iv) Promoting regional cooperation within each sector.

Strategy for Technology Transfer at the Plant-level

UNIDO will develop investment projects and offer technical assistance to enterprises where conversion will require application of the following options:

1. Use of products and processes which do not use controlled substances (e.g. water in polyurethane foams, aqueous cleaning systems); and
2. Improved housekeeping, improved equipment design, better maintenance and recycling, controlled disposal of residual waste.

For option 1, transfer of technology will be needed, especially for those enterprises or facilities with no direct link with overseas technology suppliers. The transfer of technology to these users may involve acquisition of proprietary rights, capital equipment purchasing, and training of personnel in handling the new technology.

Immediate assistance will be provided to companies where option 2 is the best option for emission reduction. Examples would be improved maintenance procedures in commercial and industrial refrigeration plants or recycling solvents used in general metal cleaning. Similar direct support will be provided to firms where a change to products and processes which avoid the use of controlled substances is a technical option. Examples are aqueous cleaning or no-clean processes in the electronics industry, and alternative blowing agents for foam production.

Work Programme Implementation Modality

UNIDO activities will be implemented as consultancy and advisory services to enterprises in recipient countries, and pre-investment activities for ODS reduction pilot schemes. These activities will assist in identifying potential investment projects, training opportunities and specific needs in streamlining institutional, regulatory and economic frameworks. These identifications will be most useful to the other Multilateral Fund agencies for existing projects and programmes and/or in elaborating new ones.

In each technical sector, UNIDO will identify and work with a specialized international/national industrial association and well-qualified sectoral experts to advise, monitor and assist in the implementation of approved sectoral programmes.

At the operational level, UNIDO staff with expertise in refrigerants, foams, solvents, aerosols, halons and fumigants will manage the development and implementation of technical assistance projects.

UNIDO will promote and undertake initiatives at the request of the governments of Article 5 countries, and in close association with private- and public-sector industry.

Coordination of Implementing Agency Work Programmes

The sectoral approach would necessitate increased coordination between implementing agencies. UNIDO's in-house mechanism at the Office of the Director-General cooperates with policy-making and technical departments and coordinates UNIDO's communication and policy coordination with other international organizations. UNIDO's experts/consultants who are selected as the key sectoral focal points will closely coordinate and interact with their counterparts in the other implementing agencies.

IV. SECTOR-BASED STRATEGY

In undertaking specific activities in each sector, UNIDO will rely on formulated country programmes which identify the ODS consumption profile in specific application sectors, and in coordination with other implementing agencies, it will develop and implement specific projects identified in those country programmes.

1. Solvents

The electronics industry is one of the major sectors where control substances are used, therefore UNIDO has been reviewing replacement options for solvents. An activity related to this area of research is a guidebook of environmental issues in the electronics industry. UNIDO, in cooperation with UNEP, has prepared a guidebook of environmental issues in the electronics industry. Elimination of CFC-based solvents has been discussed in this guidebook, as well as at several meetings with experts from industry.

UNIDO will undertake identification, preparation and implementation of projects for small- and medium-scale industries in Article 5 countries. UNIDO will also provide technical assistance for the application of alternative processes and technologies, including on-site demonstrations.

The above will include the provision of experts' services and extensive plant-level activities in practical aspects of converting processes, technologies, equipment and products.

UNIDO will provide advice in the selection of replacement solvents, cleaner technologies and associated equipment, the adaptation of existing equipment to replacement solvents, the modification of existing processes to use replacement solvents.

2. Foams

Through two UNDP projects in Bosnia implemented by UNIDO, it was possible for the counterpart in Tuzla to reduce by 50% the utilization of CFCs for rigid foams used for manufacture of refrigerators for export, to eliminate the use of CFCs when making car seats using semi-rigid polyurethanes, and to reduce by 50% the utilization of CFCs in the manufacture of flexible foams. This was all introduced industrially in 1989.

There is a wide variety of different types of foam which are made for an even wider variety of applications. There is a wide variety of possible near-term options for reducing CFC usage in foam manufacture, as well as longer-term options which may render some of the short-term options obsolete.

In order to overcome the above difficulties, the following strategy is proposed:

(1) Senior UNIDO technical staff members will participate in meetings with experts from industry and industry associations which are at the forefront of the development of technology for replacing CFCs. UNIDO staff will keep plant managers in recipient countries abreast of the latest technological developments in the field, their relative merits, and their commercial implications.

(2) UNIDO will carry out the technical and economic evaluations needed to determine the most economic way of reducing or eliminating CFC use both on a short-term and on a long-term basis. Together with national experts, UNIDO will identify the most effective method to reduce or eliminate CFC use and estimate both the capital and operating costs of so doing. Then, UNIDO will prepare project documents for submission to the Multilateral Fund.

(3) After approval, UNIDO will execute such projects. All the above activities will be carried out in cooperation with national experts from the country involved. These experts would have access to the appropriate information, in particular, the already established information systems in UNEP on the latest developments in the sector. Furthermore, the assistance of international experts would be used as needed.

3. Refrigerants

Refrigeration and air-conditioning is an important end-use sector in Article 5 countries.

Specifically, UNIDO's activities in refrigeration and air-conditioning will aim at:

- introduction of CFC free technologies in the manufacturing process of refrigeration equipment;
- technical training of staff involved in regular inspection, repair and maintenance, recovery and recycling of refrigerants;
- plant level assessments and activities for the retrofitting of existing equipment;
- strategies related to economic incentives and regulations will facilitate the redesigning process and recovery/recycling.

UNIDO will assist enterprises with appropriate packages of technical assistance, including institutional support. The technical assistance will include transfer of technology/know-how through the provision of international experts and plant-level training in practical aspects of inspection, repair, and maintenance of existing equipment, as well as converting to non-ODS processes, technologies, equipment and products.

V. CONSULTANCY SERVICES FOR SECTOR PROJECTS

1. Consultancy and advisory services to enterprises

UNIDO will pay special attention to the environmental implications associated with the acquisition of ODS reduction technology by enterprises in developing countries, and will assist and advise on the selection and contracting conditions for developing countries for ODS phase-out technologies.

UNIDO has implemented programmes to promote the flow of technology and to assist enterprises in developing countries concerning issues of technology acquisition and transfer, advisory services on technology selection and negotiation and institutional support to relevant government institutions.

These services will include consultancy, equipment identification and specifications, and training and management programmes (including retraining and training of trainers), which would focus on directly assisting enterprise managers and staff in industrial enterprises in adapting new ODS phase-out production technologies and processes;

2. ODS-evaluation at the plant level

UNIDO will undertake diagnosis of needs and in-plant evaluation of effectiveness of actions taken in converting to non-ODS processes, technologies and products.

ODS-evaluation will include monitoring the process of adaptation to non-ODS production processes and dissemination of industrial information across developing countries.

Established guidelines and manuals on in-plant audits will be used.

VI. PROJECT SUMMARIES, EXPECTED OUTCOMES

Based on the work during the four months since it gained the status of implementing agency, and on extensive consultation with the Fund Secretariat and other implementing agencies, UNIDO is submitting the attached project preparation proposals for Brazil, China, Egypt, Iran and Syria. It is anticipated that the preparatory work, once approved, could be completed within three to six months, whereupon the main plant level investment project could be considered by the Executive Committee. Furthermore, UNIDO is pursuing the identification and development of new proposals in coordination with other implementing agencies and in response to requests received from Article 5 countries.

In summary, the work programme presented consists primarily of plant-level investment project preparation proposals. Based on information contained in the relevant country strategies and on requests received on endorsement from governments, UNIDO proposes to deploy technoeconomic teams to directly assess:

- the technology employed currently;
- the technology option preferred for ODS phase out;
- specification of costs for that technology option;
- specification of equipment and installation programmes consistent with the existing plants and equipment of the enterprise;
- a time-frame for the phase out; and
- incremental cost analysis.

The output of this detailed activities will be technically evaluated main-phase project proposals for introducing the technology option recommended for phase out at the plant level. The investment project proposals will contain all the detailed information required for implementing the industrial project.

These project proposals will be presented to the Executive Committee and, if approved, the main phase could be implemented in order to achieve the ODS phase out. Therefore UNIDO is employing a two-step procedure for Fund-financed operations, with the first step being investment project preparation with detailed techno-economic analysis, and the second, the implementation of technological conversion, i.e. installation and trial runs of processes along with any requisite training to ensure the operations of the converted plant.

In instances where plant level operations can not be undertaken, e.g. when ODS phase out involves numerous small scale industries as consumers or producers, the above mentioned procedure would not only develop and present techno-economic options but would attempt to identify the most appropriate methodology e.g. pilot and demonstration projects, guidelines, domestic advisory services for ODS phase out, within a country's industrial and institutional infrastructure. In these cases, main-phase projects would not only consist of plant level interventions, but would also focus on realizing the ODS phase out through the approaches identified and defined by the preparatory assistance.

It should be stressed that the work programme submitted to the Ninth Meeting of the Executive Committee does not reflect the full potential of UNIDO in supporting the Multilateral Fund activities. This is due to the shortage of time available to the Organization in which it had to liaise with Article 5 countries, the Fund Secretariat and other implementing agencies in order to ascertain the policies, priorities and procedures required for viable submissions to the Fund.

VII. BUDGET SUMMARY OF THE WORK PROGRAMME

COUNTRY	SECTOR	PROJECT TITLE	AMOUNT U.S. \$
1. Egypt	Refrigeration Foams	Development of strategy in refrigeration and foam sectors. Preparation of investment projects in refrigeration and foam sectors	100,000
2. Syria	Refrigeration Foam	Preparation of investment project on phasing-out of CFC-12 and CFC-11 at Al Hafez refrigerator manufacturing plant in Damascus	35,000
3. China	Foams Solvents	Preparation of investment projects in foams and solvents sectors	150,000
4. Brazil	Foams	Preparation of investment projects in foams sector	150,000
Total			435,000
Thirteen percent support cost			<u>56,550</u>
Grand Total			491,550
5. Iran	Refrigeration	Preparation of investment projects in domestic refrigeration sector	50,000*

* To be transferred from U.S.\$113,000 allocated to UNDP at the 8th meeting of the Executive Committee, for project preparation in Iran .

PROJECT OUTLINE

COUNTRY	:	BRAZIL
SECTOR COVERED	:	Foams
SECTORAL ODS CONSUMPTION	:	4,500 ODP tons/year
PROJECT TITLE	:	Preparation of investment projects on ODS phase-out in the foams sector.
PROJECT DURATION	:	6 months
PROPOSED BUDGET	:	US \$150,000 (excluding support costs)
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	Ministry of Industry, Commerce and Tourism

PROJECT DESCRIPTION

The implementing agency has received a request from the Government for the preparation of investment projects and related support activities for phasing-out of CFC consumption in the foam producing industry.

The foam sector accounts for 40% of ODS consumption in Brazil. The primary end users across the sector are polyurethane (85%) polyethylene (12%) and polystyrene (3%) producers.

UNIDO has been supporting Brazil's industrial development in the chemicals industries through technical assistance projects financed both by UNDP and the Brazilian industry itself. These projects have been at both institutional and enterprise levels, involving advisory services to industry and the transfer of technology. In addition, the implementing agency has a strong field presence in the country, with a Country Director who coordinates and monitors UNIDO's programme, liaises with Brazil's government and industry, associations and coordinates with other UN agencies.

The requested resources will be utilized to develop a comprehensive programme for the phase-out of CFC-11 and CFC-12 in the foam sector. The programmes will encompass investment projects, appraisal and incremental cost analysis of those projects and related activities to support the phase out programme.

This preparatioin of investment projects will be carried out in full cooperation with the World Bank and the package of investment projects will be presented to the 11th Meeting of the Executive Committee.

The investment project proposals will consist of:

- assessment of the current technology and equipment employed in each plant;

- assessment of the technology option identified;
- equipment specification, costing and installation programme, with a schedule of trial use;
- calculation of incremental costs;
- specification of the training programme, to ensure smooth operation of the industrial plant.

PROJECT OUTLINE

COUNTRY	:	CHINA
SECTOR COVERED	:	Foams and Solvents
SECTORAL ODS CONSUMPTION	:	Foams 17,773 ODP tons Solvents 4,310 ODP tons
PROJECT TITLE	:	Preparation of investment projects to phase-out CFCs in the foam and solvent sectors
PROJECT DURATION	:	6 months
PROPOSED BUDGET	:	US \$150,000 (excluding support costs)
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	National Environment Protection Agency

PROJECT DESCRIPTION

Since 1980, the implementing agency has been extensively involved in the industrial development programmes of China. The volume of its overall technical assistance, financed by UNDP, in the industry sector has been approximately \$9,000,000 per annum, which places it as the largest UN agency programme in China. Its area of concentration have been in the electronics and chemical industries.

At present, there are about 3,000 electronics manufacturers in China, most of which are medium or small scale industries located throughout the country. The electronic products manufactured include: electronic materials, electronic elements, semiconductor devices, electro-vacuum devices, assemblies and other specific equipment. Electronic cleaning is an interim process during the production of electronic products. ODS consumption in this industry in 1991 totalled 4310 ODP tons.

There are 30-40 major soft foam polyurethane producers who consume 3,000 tons of CFC-11. There are more than 30 enterprises producing extruded foam materials. The majority of the products are used as packaging materials in the food, domestic appliances, electronics and instrument industries. The consumption of CFC-12 in the production of extruded foams is about 2,000 tons. There are also a number of enterprises producing rigid insulating polyurethane foam – materials used in refrigeration, transport, civil construction and national defence industries. About 13,000 tons of CFC-11 were consumed for this purpose. These user industries are large, state owned or private middle and small enterprises.

Given UNIDO's involvement at the institutional support and direct assistance to these consuming industries, it has the potential advantage to develop investment projects on the phase-out of CFC consumption in solvent and foam sectors. While developing the investment projects in these two sectors UNIDO's field experts will maintain close collaboration with UNDP and the World Bank experts involved in the Fund activities in China.

The government and UNIDO's technical staff will identify a group of projects in these

The government and UNIDO's technical staff will identify a group of projects in these two sectors. Investment projects will be elaborated to phase out CFCs in foam and solvent sectors. Those investment project proposals will encompass:

- assessment of the current technology and equipment employed in each plant;
- assessment of technology option identified;
- equipment specification, costing and installations programme, with a schedule of trial use;
- calculation of incremental costs;
- specification of the training programme, to ensure smooth operation of the industrial plant.

In instances where CFC phase out will require action with regard to diverse small scale producers or consumers, a strategy will be developed for transferring and promoting the use of alternative technologies. The result of this could be in such forms or demonstration plants, training support, etc. The resultant projects for phase out will be presented to the Fund.

The project budget will cover 12 work months of expert time deployed to develop proposals for the two sectors covered.

PROJECT OUTLINE

COUNTRY	:	EGYPT
SECTOR COVERED	:	Refrigeration
SECTORAL ODS CONSUMPTION	:	1,050 metric tonnes
PROJECT TITLE	:	Refrigeration and foam sector strategy development. Investment project preparation in refrigeration and foam sectors.
PROJECT DURATION	:	3 months
PROJECT IMPACT	:	Development of a refrigeration and foam sector strategy to be used as a framework for investment projects for Egypt focusing on domestic refrigeration, and foam industries. Preparation of four investment projects proposals for the phase out of CFC in foam and domestic refrigeration sector. Expected ODP reduction of the four projects: 562 ODP tons per year.
PROPOSED BUDGET	:	US \$100,000 (excluding support costs)
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	Egyptian Environmental Affairs Agency (EEAA)

PROJECT DESCRIPTION

It is proposed to undertake a detailed analysis of the industry and, on the basis of that analysis, to develop a National Strategy for the phase out programme in refrigeration and airconditioning industry in Egypt. This strategy will cover refrigerator production processes including foam insulation manufacturing. This strategy is to be prepared with the assistance of all affected Egyptian enterprises. It will develop initiatives based on common interest, upon which it will recommend plans and strategies to the Government of Egypt for implementation through ministerial decrees and supporting legislation.

The Strategy would also identify areas in which manufacturers could cooperatively reach their goals in the most cost effective manner. Proprietary technologies would only be shared by agreement. Technologies common to all manufacturers, however, would be shared in the interest of avoiding additional cost burdens to the Egyptian economy. The Government of Egypt had requested the funding for this effort in the form of a small project submitted as part of the UNDP work programme. At the Coordination meeting of implementing agencies with the Fund Secretariat, 4-5 February 1993, it was agreed that UNIDO should implement this study.

A total of 3 work months will be needed for a country wide strategy and supporting documentation for national phase-out projects in 1993-1994. This study will be available by mid 1993. Results of this activity would also serve to facilitate preparation of investment projects in domestic refrigeration.

The implementing agency has also received official requests for the following four investment projects included in Egypt's Country Programme:

- Phase-out of the use of CFC-12 in the manufacture of extruded polystyrene foams – ADVECHEMS company;
- Phase-out of CFC's in household refrigerators and freezers – Kiriazi Refrigerators Manufacturing Company;
- Phase-out of CFC-12 in Manufacture of refrigerators and freezers – Electostar Co.;
- Elimination of CFC-12 in the Manufacturing of Rigid Polyurethane foam – Al Fatah Company.

The investment project proposals were elaborated by the project counterpart in collaboration with the national coordination agency. All four projects require independent technical appraisal, elaboration of the investment projects including analysis of incremental costs. One investment project will be prepared for each of the four companies. Those investment projects proposals will be submitted for consideration by the 10th Meeting of the Executive Committee.

The investment project preparation will absorb 5 work months, and the proposals developed will encompass:

- assessment of the current technology and equipment employed in each plant;
- assessment of the technology option identified;
- equipment specification, costing and installation programme, with a schedule of trial use;
- calculation of incremental costs;
- specification of the training programme, to ensure smooth operation of the industrial plant.

PROJECT OUTLINE

COUNTRY	:	IRAN
SECTOR COVERED	:	Refrigeration
PROJECT TITLE	:	Preparation of investment project proposal for the phase-out of CFC-11 and CFC-12 in the domestic refrigeration industry
PROJECT DURATION	:	3 months
PROJECT IMPACT	:	Elaboration and technical assessment of projects in five plants of the refrigeration sector. Expected ODP reduction of 150 tons of CFC-12 and 360 tons of CFC-11
PROPOSED BUDGET	:	US \$50,000 (excluding support costs)*
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	Department of the Environment of the Islamic Republic of Iran

PROJECT DESCRIPTION

The implementing agency has received an official request from the government of the Islamic Republic of Iran for the preparation of investment projects in the domestic refrigeration sector.

The domestic refrigeration sector is an important consumer of CFCs in Iran. Consumption of CFC-12 is about 150 tons and of CFC-11 is about 360 tons. The largest producers of refrigerators are:

Azmayest	(12% of the market)
Arj	(12%)
Iran Puye	(16,25%)
Bahman	(13,54%)
Freez Iran	(13,54%)

Under this proposal, in close coordination with UNDP, investment projects will be developed for the phase-out of CFC-11 and CFC-12 for two of the above mentioned enterprises whose total consumption is about 70% of consumption of the domestic refrigeration sector.

* Interagency transfer from approved allocation for UNDP fo U.S.\$113,000.

Each investment proposal will encompass:

- assessment of the current technology and equipment employed in each plant;
- assessment of the technology option identified;
- equipment specification, costing and installation programme, with a schedule of trial use;
- calculation of incremental costs;
- specification of the training programme, to ensure smooth operation of the industrial plant.

The budget proposed will cover four work months of expertise required for the preparation, appraisal and analysis of incremental costs for the main investment projects, which will be submitted to the 10th Meeting of the Executive Committee.

PROJECT OUTLINE

COUNTRY	:	SYRIA
SECTOR COVERED	:	Refrigeration, Foams
SECTORAL ODS CONSUMPTION	:	Approximately 300 tons
PROJECT TITLE	:	Preparation of an Investment Project Proposal for phase-out of CFCs at Al-Hafez Refrigerator Factory
PROJECT DURATION	:	2 months
PROJECT IMPACT	:	Phase-out of CFCs at Al-Hafez Refrigerator Factory. Expected ODP Reduction in one of the main manufacturer of household and commercial refrigerators and freezers in the Arab Republic of Syria: 14 ODP tons/year.
PROPOSED BUDGET	:	US \$35,000 (excluding support costs)
IMPLEMENTING AGENCY	:	UNIDO
NATIONAL COORDINATING AGENCY	:	General Commission for Environmental Affairs

PROJECT DESCRIPTION

The implementing agency received the official government request of the Syrian Arab Republic for one investment project for one national manufacturing enterprise presently producing household and commercial refrigerators and deep freezers for the local market in Syria, namely Al-Hafez Refrigerator Factory in Damascus. The investment project will aim at phasing-out the use of CFC-11 as foam blowing agent and CFC-12 as refrigerant in manufacturing of refrigerators and freezers.

The investment project preparation will require 2 w/m of specialized expertise. The proposal developed will contain the following:

- Assessment of the current technology and equipment employed in each plant;
- Assessment of the technology option identified;
- Equipment specification, costing and installation programme, with a schedule of trial use;
- Calculation of incremental costs;
- Specification of the training programme, to ensure smooth operation of the industrial plant.

The project will be submitted for consideration by the Executive Committee at its tenth meeting.