

ANNEX E

SUB-PROJECT COVER SHEETS

ANNEX E1: Subproject 1: Institutional Strengthening and Capacity Building

COUNTRY:	Armenia	IMPLEMENTING AGENCY:	UNEP
PROJECT TITLE:	INSTITUTIONAL STRENGTHENING AND CAPACITY BUILDING		
IN CURRENT BUSINESS PLAN	: YES		
SECTOR	: All		
SUB-SECTOR	: ALL		
	ODS USE IN SECTOR		
	CURRENT (2000)	: 173.48 ODP TONNES	
ODS USE IN SUBSECTOR (ESTIMATE)		: 173.48 ODP TONNES	
PROJECT IMPACT		: N/A	
PROJECT DURATION		: 3 YEARS (2003-2005)	
TOTAL PROJECT COST			
INCREMENTAL CAPITAL COST		: US \$ 212 600	
CONTINGENCY		: US \$ 21 260	
INCREMENTAL OPERATING BENEFITS		: NOT APPLICABLE	
TOTAL PROJECT COST		: US \$ 233 860	
LOCAL OWNERSHIP		: 100 %	
EXPORT COMPONENT		: 0 %	
REQUESTED GRANT		: US \$ 233 860	
GRANT-EFFECTIVENESS		: N/A	
AGENCY SUPPORT COST		: US \$ 18 709	
TOTAL PROJECT COST TO GEF		: US \$ 252 569	
STATUS COUNTERPART FUNDING		: US \$ 42 000	
MONITORING MILESTONES		: Included in document	
NATIONAL COORDINATING AGENCY		: NATIONAL OZONE OFFICE - ARMENIAN REPUBLIC	

PROJECT SUMMARY

The project aims at institutional strengthening in matters related to the Ozone Issue. In this context, a National Ozone Office will be created within the Ministry of Nature Protection. This Office will monitor all the project activities as per the Country Programme including the collection of consumption data and reporting as required.

The institutional structure within Armenia needs more organized and efficient systems to monitor and control the imports of CFC or CFC-containing equipment in the country. Armenia has common borders with four (4) countries. This is a long border that is controlled by (13) crossings and one main customs entry point in Yerevan. All are manned by officers who have no means of identifying or verifying the chemicals entering the country. Training Customs officers will enable them to identify controlled substances. The project will provide CFC-detection equipment for the customs entry points in the country.

IMPACT OF THE PROJECT ON COUNTRY'S MONTREAL PROTOCOL OBLIGATIONS

This project will ensure that the projects are implemented as designed thus adhering to the phase-out schedule given in the Country Programme and as such is important in helping the Government meet its obligations under the Montreal Protocol.
This project will also allow the Customs Department to create a reliable database to better control their consumption.

STAP REVIEW: Not applicable

PROJECT COVER SHEET

COUNTRY	: ARMENIAN REPUBLIC	IMPLEMENTING AGENCY	: UNEP
PROJECT TITLE	: Institutional Strengthening Project		
IN CURRENT BUSINESS PLAN	: YES		
SECTOR	: All		
SUB-SECTOR	: All		
ODS USE IN SECTOR			
Current (2000)	: 173.48 ODP Tonnes		
ODS USE IN SUBSECTOR (estimate)	: 173.48 ODP Tonnes		
PROJECT IMPACT	: N/A		
PROJECT DURATION	: 3 years (2003-2005)		
TOTAL PROJECT COST			
Incremental Capital Cost	: US \$ 212 600		
Contingency	: US \$ 21 260		
Incremental Operating Benefits	: Not applicable		
Total Project Cost	: US \$ 233 860		
LOCAL OWNERSHIP	: 100 %		
EXPORT COMPONENT	: 0 %		
REQUESTED GRANT	: US \$ 233 860		
GRANT-EFFECTIVENESS	: N/A		
AGENCY SUPPORT COST	: US \$ 18 709		
TOTAL PROJECT COST TO GEF	: US \$ 252 569		
STATUS COUNTERPART FUNDING	: US \$ 42 000		
MONITORING MILESTONES	: Included in document		
NATIONAL COORDINATING AGENCY	: National Ozone Office - Armenian Republic		

PROJECT SUMMARY

The project aims at institutional strengthening in matters related to the Ozone Issue. In this context, a National Ozone Office will be created within the Ministry of Nature Protection. This Office will monitor all the project activities as per the Country Programme including the collection of consumption data and reporting as required.

The institutional structure within Armenia needs more organized and efficient systems to monitor and control the imports of CFC or CFC-containing equipment in the country. Armenia has common borders with four (4) countries. This is a long border that is controlled by (13) crossings and one main customs entry point in Yerevan. All are manned by officers who have no means of identifying or verifying the chemicals entering the country. Training Customs officers will enable them to identify: controlled substances. The project will provide CFC-detection equipment for the customs entry points in the country

IMPACT OF THE PROJECT ON COUNTRY'S MONTREAL PROTOCOL OBLIGATIONS

This project will ensure that the projects are implemented as designed thus adhering to the phase-out schedule given in the Country Programme and as such is important in helping the Government meet its obligations under the Montreal Protocol

This project will also allow the Customs Department to create a reliable database to better control their consumption.

Prepared by: Dr. Adham Khalil, Eng.

Date: March 2002

PROJECT DESCRIPTION

1. Institutional Strengthening component

1.1 GENERAL

The Armenian Republic has committed itself to an Action Plan specified in the Country Programme in which Annex A and B chemicals are scheduled to be eliminated by 2010. Integral to the Action Plan is the establishment of a National Ozone Office with the responsibility of monitoring the use of ODS, coordinating the implementation of projects designed to eliminate ODS consumption, compiling data on ODS use for reporting to the GEF and the Montreal Protocol.

The Ministry of Nature Protection has the responsibility for matters relating to the Vienna Convention and the Montreal Protocol. Currently, the human and technological resources available to address ozone issues are very limited, which may prove to be a significant handicap in terms of the implementation of projects and strategies identified in the Country Programme. Furthermore, the current staff of the Ministry would be unable to adequately monitor and report on ODS consumption in the Country. The ability to meet obligations established in the Montreal Protocol would therefore be inhibited by the limited institutional capacity.

The project specifies the total costs of undertaking an institutional strengthening project, and identifies the portion to be met by the Government and that requested from the GEF.

The main objective of the project is to strengthen the national institutional capacity in order to facilitate the efficient and effective coordination and administration of ozone matters. The project would also facilitate a more detailed review of the current capital investment in ODS technologies and identify strategies to assist in the replacement of this equipment.

More specifically, the project seeks to:

1. Establish a National Office within the Ministry of Nature Protection to be responsible for administering matters relating to the Vienna Convention, the Montreal Protocol and GEF;
 2. Upgrade the capacity of the National Focal Point to coordinate and implement projects designed to reduce and eliminate ODS consumption in the Country;
- Develop the capacity of the National Focal Point, including the establishment of a comprehensive database of imports, major uses of ODS and companies involved, in order to monitor, analyze and report on the consumption of ODS in the Country;
 - Undertake a comprehensive assessment of ODS technologies utilized in commercial enterprises and identify strategies to assist in the transition to technologies using alternative substances;
 - To monitor the ongoing developments in efforts to protect the Ozone Layer;
 - Coordination of training for a number of Custom Officials to facilitate the implementation of procedures for using tariff classifications within the Harmonized System, to extract and report data on trading in ODS;
 - Monitor the training of Customs Officers in identifying imported Ozone Depleting Substances;
 - To coordinate requirements for the identification and quantification of controlled substances at the point of entry;
 - To assist training bodies in setting up technical training programmes;

- To assist in the preparation of budgets and advise on the release of funds from the GEF;
 - Monitor all projects which are implemented according to the Country Programme, including training / re-training activities.
 - Develop an effective and efficient documentation center and Information Focal Point to disseminate information on ozone matters, both on request and via public awareness programmes;
 - Develop and coordinate public awareness programmes both aimed at general audiences and targeting specific sectors.
 - To report annually to both the GEF and the Ozone Secretariat in Nairobi-Kenya on the ODS consumption in the country according to Article 7 of the Montreal Protocol; and
 - To report annually to the GEF Secretariat on the progress in the implementation of the Country Programme.
3. Develop and establish the appropriate legislation and regulatory framework to mitigate the risk of illegal import and illegal trade of ODSs in the country:
- Introduce a ban on import of ODS-containing equipment
 - Introduce a ban on transit or export of ODSs from the country
 - Introduce a licensing system and quotas for import of ODSs into the country
 - Introduce a licensing (certification) system for trading in ODS and ODS-containing equipment
 - Introduce appropriate tax incentives to facilitate use of alternative substances
 - Develop the capacity of the Custom Offices to identify, monitor and report the imports of ODS in the Country;

A National Ozone Office will be established in the Ministry of Nature Protection with the responsibilities listed above. Part of the costs, as described in the table below, associated with the establishment of this National Ozone Office, which is essential to the successful phase out of ODS are incremental costs to be borne by the GEF, the remaining costs, also shown below, will be borne by the Government of Armenia.

The following issues will have direct impact on the success in the implementation of the Action Plan described in the Country Programme. These are:

1.2 Raising Awareness:

One of the main objectives of the Institutional Strengthening Project is to support public awareness activities. These include information seminars to industries and industry associations, school-targeted awareness programmes, and consumer-oriented information campaigns. Awareness materials produced under the Montreal Protocol, i.e. videos, posters, guidelines for raising awareness, etc., will be used as they are made available.

1.3 Refrigerant Management Plan (RMP):

As the overall responsible entity for Ozone Related matters and projects in the Armenian Republic, monitor the work done by the National Consultant and the data collected regarding the activities of the Refrigerant Management Plan (RMP). This includes public awareness and data related to the recovery and recycling of refrigerants ensuring the provision for critical stocks for the 'service tail' through internal conservation techniques as well as external suppliers, if necessary.

1.4 Training of Refrigeration Sector Technicians:

Training of refrigeration technicians in installation of new refrigeration equipment and in servicing and maintenance in the refrigeration sector. Coordination of training is an activity of paramount importance for short and long term decrease of ODS consumption.

General training of refrigeration technicians will be carried out. Training in Recovery and Recycling will be accomplished through the project that is included in the annex of the Country Programme.

This Institutional Strengthening Project will coordinate all the activities relating to the Ozone in the Country.

2. Capacity Building component

2.1 Background

The institutional structure within Armenia needs more organized and efficient systems to monitor and control the imports of CFC or CFC-containing equipment in the country. Armenia has common borders. This is a long border that is controlled by (13) crossings and one main customs entry point in Yerevan. All are manned by officers who have no means of identifying or verifying the chemicals entering the country. There are (4) crossings to Georgia to the North, (4) crossings to Azerbaijan to the East and South West, (1) to Iran to the South and (3) to Turkey to the West. There is also one international airport in Yerevan. It is to be noted that although some of these border crossings are presently closed, they will be opened at some time in the future.

The Customs Department does not have reliable statistics as required to control ODS consumption. Thus there is an urgent need for customs officers to be trained in recognizing and identifying CFC. There is also a lack of specific customs codes for ODS and the lack of regulations for their control.

To enable Armenia meet its obligations under the Montreal Protocol, it has become imperative to work hand in hand with other institutions directly involved in the control and monitoring of chemicals. Some of these institutions identified are:

- Ministry of Internal Affairs,
- Ministry of Transport,
- Ministry of Ecology,
- Ministry of Health,
- Ministry of Finance,
- Ministry of Industry and External Trade.

The collaborative operation of these institutions will help establish a dependable chemical monitoring, control and database for the country as well as to effectively regulate the importation and consumption of ODSs and ODS containing equipment.

The importation of CFC-containing equipment into the country is on the rise, especially, as the state of the economy is improving. Awareness raising, education and training for customs officials, and other government personnel involved in the control of the importation of ODS and ODS containing equipment are priorities of national concern.

2.2 Objectives

This project thus aims at:

1. Training Customs officers (inspectors, controllers and customs policemen) so as to enable them to:
 - know about ozone depletion and its effects;
 - get acquainted with the ODS import/export licensing system and other national regulations related to the phase-out of ODS, and their role in it;
 - identify controlled substances under the Montreal Protocol;
 - identify imported refrigerators, freezers and other refrigeration equipment using CFC;
 - monitor the sources of ODS imported into the country in order to stop possible illegal trade and report it to the National Ozone Office; and
 - record imports of ODS and ODS-containing equipment and report to the NOO.

2. Providing CFC-detection equipment for all customs entry points in the country
3. Including the above training within the regular Capacity Building programmes in order to reach the totality of the customs officers,
4. Create a national database on ODS imports at the Department of Customs, Excise and Preventive Services,
5. Improve existing permit procedures for ODS imports.

2.3 Expected results and criteria for success

The expected result is a more efficient control of CFC and CFC using equipment upon entrance to the country.

The criteria for success will be the percentage of import / export permits correctly handled by the Department of Customs, Excise and Preventive Services and the percentage of targeted random checks performed on suspect imports.

2.4. Target audience

Training will be directed to customs officers (inspectors, controllers and customs policemen) with at least 5 years experience and if possible some supervisory functions. Trainees should come from the different customs entry points in the country and will be in charge of training new customs officers after they complete the training sessions described in this document.

2.5 Approach

Training sessions will be carried out through lectures and hands-on sessions with CFC-detection equipment.

2.6 Time frame

- The project will be developed in 6 months through the following phases: *Phase I* (approximately six months after approval of the project, and only after ODS import/export licensing system is ready to be put in place): During the first phase a group of selected customs trainers and more experienced customs officers (30) will be trained as trainers by an international consultant (1 training course), and
-
- Phase II (during six months, simultaneously with phase I): During this phase the results of the training will be monitored and evaluated

Training should only take place after the import / export-licensing system is ready to be implemented.

As the expected date for action to start on this is 2002, the training could take place later this year.

2.7 Co-operating partners and their role

The customs department will be involved from the start of the project in order to get their input for specific issues in the training agenda.

2.8 Supporting and follow up actions

As a support action, the import / export licensing system must be ready to be put in place in order for this training to be useful.

As a follow up action, the customs department will provide the Ozone Office / Chemicals Control and Management Centre, Environmental Protection Agency a report on the percentage of import / export permits correctly handled by customs and the percentage of targeted random checks performed on suspect imports, three and six months after the training takes place. The results of such reports will be included in the Project Completion Report to the Executive Committee.

3. Budget:

Cost Item	2002	2003	2004	Total US\$
1. INSTITUTIONAL STRENGTHENING COMPONENT				
Equipment: Purchase and use of equipment; including microprocessor, printer, modem, software, power regulator, photocopying machine, telephone fax	15,000			15,000
Staffing: Project Coordinator, Professionals, assistants and secretary	18,000	18,000	18,000	54,000
Operating Costs: Telecommunications charges, service charges, office supplies, equipment maintenance	18,000	16,000	12,000	46,000
Public Awareness: Broadcasting, printed media campaigns	18,000	10,000	8,000	46,000
Substantive assessment and coordination related to technical and policy issues	8,000	6,000	4,000	18,000
Sub-total	77,000	50,000	42,000	169,000
Contingencies (10%)	7,700	5,000	4,200	16,900
Total GEF Contribution	84,700	55,000	46,200	185,900
Government Contribution				
Local Office: Office space, local telephone, etc.	14,000	14,000	14,000	42,000
Total Component Cost	98,700	69,000	60,200	227,900
2. CAPACITY BUILDING COMPONENT				
CFC detector kits (14*900 US\$)	12,600			
International Consultant, including fees, travel and DSA	10,000			
Local Consultant	3,000			
Workshop services, including pens, paper, photocopying, etc.	18,000			
Contingencies (10%)	4,360			
Total Component Cost	47,960			47,960
Total Project Costs to GEF				233,860
Agency support cost (8%)				18,709
Total project Cost to GEF				\$252,569

ANNEX

BORDER CROSSINGS-CUSTOMS OFFICES IN ARMENIA

Border crossing number	Border crossing name	Neighboring country
1	Yerevan International Airport	Within Armenia
2	Meguri	Iran
3	Sisslan	Azerbaijan
4	Ykraskh	Azerbaijan
5	Goris	Azerbaijan
6	Ijevan	Azerbaijan
7	Markara	Turkey
8	Talin	Turkey
9	Gomri	Turkey
10	Bavra	Georgia
11	Gogavan	Georgia
12	Privonoye	Georgia
13	Jujza	Georgia
14	Bugratashen	Georgia

ANNEX E

SUB-PROJECT COVER SHEETS

ANNEX E2: Subproject 2.1: Training of Trainers of Technicians in Good Practices

COUNTRY:	Armenia	IMPLEMENTING AGENCY:	UNEP
PROJECT TITLE:	TRAINING OF TRAINERS OF TECHNICIANS IN GOOD PRACTICES IN REFRIGERATION		
PROJECT IN CURRENT BUSINESS PLAN:	Yes		
SECTOR/ SUBSECTOR:	Refrigeration		
IN CURRENT BUSINESS PLAN	: YES		
SECTOR	: Refrigeration		
SUB-SECTOR	: REFRIGERATION		
	CURRENT (2000)	ODS USE IN SECTOR	
		: 158.21 ODP TONNES	
ODS USE IN SUBSECTOR		: 158.21 ODP TONNES	
PROJECT IMPACT		: 3 ODP TONNES / YEAR	
PROJECT DURATION		: 1 YEAR (2003)	
TOTAL PROJECT COST			
INCREMENTAL CAPITAL COST		: US \$ 123 600	
CONTINGENCY		: US \$ 10 300	
INCREMENTAL OPERATING BENEFITS		: NOT APPLICABLE	
TOTAL PROJECT COST		: US \$ 133 900	
LOCAL OWNERSHIP		: 100 %	
EXPORT COMPONENT		: 0 %	
REQUESTED GRANT		: US\$ 133 900	
GRANT-EFFECTIVENESS		: N/A	
AGENCY SUPPORT COST		: US\$ 10 712	
TOTAL PROJECT COST TO GEF		: US\$ 144,612	
STATUS COUNTERPART FUNDING		:	
MONITORING MILESTONES		: Included in document	
NATIONAL COORDINATING AGENCY		: NATIONAL OZONE OFFICE	

PROJECT SUMMARY

This project will use the train-the-trainers approach to provide technical information and training on good servicing practices to technicians in the refrigeration sector in order to reduce CFC consumption during the servicing of refrigeration units.

IMPACT OF THE PROJECT ON COUNTRY'S MONTREAL PROTOCOL OBLIGATIONS

By training technicians in the proper techniques of repair and maintenance, the expected impact will be a reduction of 3 ODP Tonnes/year of saved CFC-12 as such is important in helping the Government meet its obligations under the Montreal Protocol

STAP REVIEW: Not applicable

PROJECT COVER SHEET

COUNTRY : ARMENIAN REPUBLIC **IMPLEMENTING AGENCY** : UNEP

PROJECT TITLE : Training of Refrigeration Technicians Project

IN CURRENT BUSINESS PLAN : YES

SECTOR : Refrigeration

SUB-SECTOR : Refrigeration

ODS USE IN SECTOR

Current (2000) : 158.21 ODP Tonnes

ODS USE IN SUBSECTOR : 158.21 ODP Tonnes

PROJECT IMPACT : 3 ODP Tonnes / year

PROJECT DURATION : 1 year (2003)

TOTAL PROJECT COST

Incremental Capital Cost : US \$ 123 600

Contingency : US \$ 10 300

Incremental Operating Benefits : Not applicable

Total Project Cost : US \$ 133 900

LOCAL OWNERSHIP : 100 %

EXPORT COMPONENT : 0 %

REQUESTED GRANT : US\$ 133 900

GRANT-EFFECTIVENESS : N/A

AGENCY SUPPORT COST : US\$ 10 712

TOTAL PROJECT COST TO GEF : US\$ 144,612

STATUS COUNTERPART FUNDING :

MONITORING MILESTONES : Included in document

NATIONAL COORDINATING AGENCY : National Ozone Office - Armenian

Republic

PROJECT SUMMARY

This project will use the train-the-trainers approach to provide technical information and training on good servicing practices to technicians in the refrigeration sector in order to reduce CFC consumption during the servicing of refrigeration units.

IMPACT OF THE PROJECT ON COUNTRY'S MONTREAL PROTOCOL OBLIGATIONS

By training technicians in the proper techniques of repair and maintenance, the expected impact will be a reduction of 3 ODP Tonnes/year of saved CFC-12 as such is important in helping the Government meet its obligations under the Montreal Protocol

Prepared by: Dr. Adham Khalil, Eng./NOU

Date: March 2002

PROJECT DESCRIPTION

1. Background

This project will provide technical information and training on good servicing and maintenance practices to technicians in the refrigeration sector in order to reduce CFC consumption during. In order to achieve the objectives as identified in the Country Programme Action Plan and Refrigerant Management Plan, professional training for hands-on service, maintenance and repair personnel is essential. There are about 200 technicians specialising in repair of Domestic Refrigerators, 300 specialising in Commercial Refrigeration, 150 in Industrial Refrigeration and about 100 who do refrigeration work on a part time basis for a total of about 750 refrigeration technicians. The refrigeration sector uses 156.5 ODP Tonnes per year of Annex A Group I Chemicals. Therefore, this training project for refrigeration servicing technicians is critical to the effective CFC phaseout in Armenia since the refrigeration sub-sector consumes the majority of CFCs in the country.

2. Objectives

The aim of the project is to improve service and maintenance practices in order to prevent intentional and/or unintentional releases of CFC into the atmosphere, thus saving the release of CFC-12 making it possible for refrigeration equipment to operate to the end of its useful life.

The training programme will include hands-on sessions and will cover the following items: Elements of ozone depletion, its effects, and the relation with control measures and the provisions under the Montreal Protocol controlled refrigerants; methods for appropriate servicing and maintenance practices for CFC-containing refrigeration equipment, as well as for equipment operating with new drop-in refrigerants, leak detection; concepts of refrigerant recovery and recycling; proper handling of refrigerants; government regulations which will affect the refrigeration sector, including practical hand-on sessions.

The project will ensure permanent use of good refrigeration service and maintenance practices for systems using ozone-friendly substances, and the correct handling of new replacement refrigerants throughout the country. This project will be coordinated with the Recovery and Recycling project and the Government's Refrigerant Management Plan.

3. Expected Results

It is expected that the following results will be obtained by this project:

- Reduction of CFC consumption due to leaks and poor servicing practices;
- Re-training of about 750 refrigeration technicians on good practices;
- Reduction in the number of repairs of refrigeration equipment and preventive maintenance;
- Improved maintenance and servicing practices in the refrigeration sector;

4. Target Audience

This project is being proposed to train the most experienced refrigeration technicians in the country in the proper methods of performing repairs, maintenance and installation of refrigeration and air conditioning equipment to avoid leaks and unnecessary emissions of CFCs.

5. Approach

The UNEP training manual on Good Practices in Refrigeration will be used as the main training material and adaptation to local conditions will be made if necessary.

5.1. The project will be organized in two Phases:

Phase I: Initial "Train the Trainers" course in Refrigeration Servicing.

An international consultant will carry out the initial Training of the Trainers workshop in Yerevan. It will be implemented and coordinated by the National Ozone Office of the Ministry of Nature Protection of Armenian Republic, in consultation with the local consultants. The training will include not more than 50 technicians selected from the major Service Companies in the country.

The main tasks of the international consultant will be to organise and implement the initial training activities for service and maintenance of refrigeration systems; assist organisations and technicians in evaluating their systems and advice on possible retrofitting of existing equipment using non-CFC, as well as advise the trainers on the second phase of training all technicians in the country.

The main tasks of the national consultant will be to make a complete inventory of technicians to be trained in the country, to assist the international consultant in the preparation of the training sessions, to select the trainers to be trained, to organise and assist in the preparation of the second phase training sessions and to follow up on the further establishment of the good practices in the refrigeration servicing sector.

Phase II: Training of 750 refrigeration maintenance service technicians in good servicing and maintenance practices in the domestic, commercial and industrial refrigeration sub-sectors.

During this phase, the 50 trainers initially trained during Phase I will carry out additional training workshops. Taking into account that there are about 40 repair workshops with 750 employed technicians some of whom are working independently and that there should be no more than 30-35 participants in each training session, followed by 22 training sessions to be held in cities around Armenia.

When all of the approximately 750 technicians in Armenia are trained, a license certificate will be awarded to the technicians who have successfully completed the training course. This certificate should become one of the requirements to be licensed to handle and purchase CFCs. Only organisations whose technicians will have been trained would receive the proposed equipment.

One of the Training Centres will be established in Yerevan, others will be decided at a later stage for the duration of this project and will continue operating as such to provide professional education for future generations of refrigeration specialists and to serve as a Consultative Centres related to refrigeration technical and research issues.

5.2. Equipment for the Training Sessions

This project will provide two (3) sets of recovery and recycling equipment as well as the associated equipment similar to that, which is included in the Recovery and Recycling Project. After the training sessions are over, the equipment will be left in the institutions in which these sessions were held.

6. Time Frame

Activity	Quarter											
	2003				2004				2005			
	1	2	3	4	5	6	7	8	9	10	11	12
Training of Trainers for good refrigerant management practices				x								
Training of technicians in good refrigerant management practices					x	x	x	x	x	x	X	

7. Cooperating partners

The National Ozone Office through the Monitoring of the RMP Project, would be responsible for the monitoring and reporting on the progress of the various activities of this project, and suggested corrective measures, if applicable. This phase should also include some consideration of how to make the training a permanent part of the curriculum in Armenia.

8. Follow up actions

This project would include follow up on the implementation of the further training of refrigeration technicians, as well as monitoring on the progress achieved in using the good practices in the refrigeration servicing sector. This would be done by the national consultant and visits by the international consultant, in cooperation with the National Ozone Office.

9. Budget

The total budget for this project is US\$133,900 and is detailed below:

COST ITEM	TOTAL US\$
International consultant; including fees, travel and DSA	14,000
Local Consultant	5,500
Technical Training Material – adaptation and additional literature (includes training material for local training programmes)	5,000
Equipment for the training sessions	38,000
Reproduction of developed materials	6,000
Cost of initial training (Train-the-trainers)	9,000
Cost of subsequent ongoing training activities (Train-the-technicians)	18,000
Simultaneous Translation	4,000
Incentive to local trainers for Phase II	4,600
DSA and Travel for non-local participants	6,500
Sub-Total	103,000
Contingencies 10%	10,300
Substantive Assessment and Coordination Related to Technical and Policy Issues	20,600
TOTAL PROJECT COST	133,900

ANNEX E

SUB-PROJECT COVER SHEETS

ANNEX E3: Subproject 2.2 National Programme for Recovery & Recycling of Refrigerants

COUNTRY: ARMENIA **IMPLEMENTING AGENCY:** UNDP

PROJECT TITLE: NATIONAL PROGRAMME FOR RECOVERY & RECYCLING OF REFRIGERANTS

SECTOR/ SUBSECTOR: Refrigeration / Servicing
ODS USE IN SECTOR: (2000) 158.21 MT ODP

PROJECT IMPACT: 27.4 MT ODP

PROJECT DURATION: 36 MONTHS

PROJECT COSTS:	INCREMENTAL CAPITAL COST	US\$	504,710
	CONTINGENCIES	US\$	46,596
	INCREMENTAL OPERATING COST	US\$	N/A
	TOTAL PROJECT COSTS	US\$	551,306

LOCAL OWNERSHIP: 100%

EXPORT COMPONENT: 0%

REQUESTED GRANT: US\$ 551,306

COST-EFFECTIVENESS: US\$/KG/Y 20 (LVCC)

EXECUTING AGENCY FEE (8%): US\$ 44,104

TOTAL COST OF PROJECT TO GEF: US\$ 595,410

STATUS OF COUNTERPART FUNDING: NOT APPLICABLE

PROJECT MONITORING MILESTONES INCLUDED: INCLUDED

NATIONAL COORDINATING BODY: MINISTRY OF NATURE PROTECTION
OF THE ARMENIAN REPUBLIC

PROJECT SUMMARY

The project is to implement a comprehensive National Programme for Recovery / Recycling of refrigerants in the refrigeration and air conditioning sub-sectors as part of the Refrigerant Management Plan (RMP). Five training seminars for technicians performing repairs, maintenance and installation of refrigeration and air conditioning equipment will be held to familiarize all involved with the RMP and the National Recovery & Recycling Programme. The project will provide 100 recovery equipment and 150 manual recovery pumps and recovery bags to be distributed to those who repair mostly CFC-12 domestic refrigerators. The project will also provide 10 sets of recycling equipment strategically distributed around the country. A system for monitoring the quantity and quality of the CFC recycled is planned (although it forms part of another parallel project), to ensure the success of the National Recovery & Recycling Programme.

PREPARED BY: Dr. Adham Khalil, Eng. / NOU
REVIEWED BY: Dr. L.J.M. Kuijpers

DATE: MARCH 2002
DATE: March 2002

PROJECT COVER SHEET

COUNTRY: Armenian Republic **IMPLEMENTING AGENCY:** UNDP

PROJECT TITLE: NATIONAL PROGRAMME FOR RECOVERY & RECYCLING OF REFRIGERANTS

PROJECT IN CURRENT BUSINESS PLAN: Yes

SECTOR/ SUBSECTOR: Refrigeration / Servicing

ODS USE IN SECTOR: (2000) 158.21 MT ODP

PROJECT IMPACT: 27.4 MT ODP

PROJECT DURATION: 36 Months

PROJECT COSTS:

Incremental Capital Cost	US\$	504,710
Contingencies	US\$	46,596
Incremental Operating Cost	US\$	N/A
Total Project Costs	US\$	551,306

LOCAL OWNERSHIP: 100%

EXPORT COMPONENT: 0%

REQUESTED GRANT: US\$ 551,306

COST-EFFECTIVENESS: US\$/kg/y 20 (LVCC)

EXECUTING AGENCY FEE (8%): US\$ 44,104

TOTAL COST OF PROJECT TO GEF: US\$ 595,410

STATUS OF COUNTERPART FUNDING: Not applicable

PROJECT MONITORING MILESTONES INCLUDED: Included

NATIONAL COORDINATING BODY: Ministry of Nature Protection of the Armenian Republic

PROJECT SUMMARY

The project is to implement a comprehensive National Programme for Recovery / Recycling of refrigerants in the refrigeration and air conditioning sub-sectors as part of the Refrigerant Management Plan (RMP). Five training seminars for technicians performing repairs, maintenance and installation of refrigeration and air conditioning equipment will be held to familiarize all involved with the RMP and the National Recovery & Recycling Programme. The project will provide 100 recovery equipment and 150 manual recovery pumps and recovery bags to be distributed to those who repair mostly CFC-12 domestic refrigerators. The project will also provide 10 sets of recycling equipment strategically distributed around the country. A system for monitoring the quantity and quality of the CFC recycled is planned (although it forms part of another parallel project), to ensure the success of the National Recovery & Recycling Programme.

PREPARED BY: Dr. Adham Khalil, Eng. / NOU
REVIEWED BY: Dr. Lambert Kuijpers

DATE: March 2002
DATE: March 2002

PROJECT OF THE ARMENIAN REPUBLIC

PROGRAMME FOR RECOVERY AND RECYCLING OF REFRIGERANTS ACCORDING TO THE NATIONAL REFRIGERANT MANAGEMENT PLAN

1. OBJECTIVE

The main objective of the project is to implement a comprehensive national programme for recovery and recycling of refrigerants in the refrigeration and air-conditioning sub-sectors according to the Refrigerant Management Plan (RMP).

2. SECTOR BACKGROUND

The Country Programme (CP) for the elimination of Ozone Depleting Substances (ODS) indicates that in the year 2000, 158.21 ODP Tonnes were used in the refrigeration sector. Comprising 2 ODP Tonnes of CFC-11 and 156.21 ODP Tonnes of CFC-12. The CFC-12 was mainly used for repair and maintenance of refrigeration and air-conditioning equipment.

This project is part of an overall strategy by the Government for the Refrigeration Sector. It is the Government's first priority to stop the discharge of CFC into the atmosphere due to leaks, servicing emissions and the use of CFCs to flush the systems in the refrigeration and air-conditioning sub-sectors. In order to achieve this goal, the Government is considering a proposal to control the deliberate venting of CFC and train refrigeration technicians in proper techniques of repair and maintenance of refrigeration equipment. An introductory training programme on the Good Practices in Refrigeration will also be part of the present programme. It is to be noted that the full training session on Good Practices in Refrigeration is an independent project.

In accordance with the Copenhagen Amendment to the Montreal Protocol, CFC production has ceased at the end of 1995 in Article 2 Parties. Consequently, the availability and market price of CFC is affected, which in turn affects consumers in this country. This is especially the case in the Refrigeration Sector. This country imports all its requirements of CFC and HCFC.

Indirectly, the implementation of the present project will allow the country to continue to use the existing refrigeration and air-conditioning installations for a further period of time without having to retrofit the equipment or buy new equipment. This is due to the future availability of recovered and recycled CFC in the country.

A survey, completed by the Ministry of Nature Protection of the Armenian Republic in 2001, indicates that there are more than 750 refrigeration technicians in the country. The survey also indicates that there are 42 companies of different sizes in the country that repair refrigeration equipment in the country. They all carry out maintenance and repair of domestic, commercial and industrial refrigeration equipment; many also maintain air conditioning units.

With a population of about 3.8 Million in the year 2000, there were, about 870,000 Domestic Refrigerators. There are also some 5,000 Freezers, 3,800 Shelf Refrigerators, 9,000 Display Freezers, 4,200 Commercial Refrigerators, 1,600 Cold Rooms used for conservation of fruits and at least 3 CFC-12 Chillers. There are also some 15 CFC-12 Ice cream plants and some 15 HCFC-22 Ice Cream Plants as well as some Ammonia operated plants. There are at least 95 other refrigeration equipment used in the milk industry. These use CFC-12 or HCFC-22. There are also at least 8 HCFC-22 Chillers, 115 HCFC-22 Refrigerated Trucks, and 16 HCFC-22 Wagons.

In 2000 there were a number of domestic air-conditioning systems in the country. The exact number could not be determined.

The Government through the efforts of the Ministry of Nature Protection, is in the process of putting in place legislative measures to control import of ODS and equipment that contain them.

3. PROJECT JUSTIFICATION

The Government decided to develop a RMP which concludes that the optimum way to phase out ODS is to concentrate on training of trainers of refrigeration technicians, customs officers and introduce the present National Recovery and Recycling of Refrigerants Programme. The Government has also taken a policy decision to phase out the consumption of ODS as given in the RMP. In order to repair and service existing equipment, there will be a demand for CFC beyond 2007. Part of the demand for CFC-12 to maintain refrigeration equipment will be met through recycled refrigerants. On the supply side, the imports of ODS will be according to the Country Programme schedule. It is therefore important that conservation of CFC through recovery and recycling be commenced early, enabling realization of the country's phase out schedule.

Three main ways of reducing the release of ODS will be from:

- i. Supplying major CFC users and service shops with recovery and recycling of refrigerant equipment to be used during service, conversion and disposal of equipment;
- ii. Improving the maintenance procedures for refrigeration and air-conditioning equipment through training and introducing up-to-date practices in CFC, HCFC and HFC charging as well as handling;
- iii. Training in refrigerant containment.

The use of recycled CFC will provide an alternative source from imported virgin CFC. It is expected that by securing this volume of refrigerant, the country's demand for imports of CFC-12 will be reduced. The Ministry of Nature Protection of the Armenian Republic will monitor the recovery and recycling operations of this national programme.

The quantity of CFC-12 that will not have to be imported in the country, thanks to the recovery and recycling efforts of this programme, is of economical importance to the country. The quantity of CFC-12 that will have to be manufactured in the future will consequently also decrease, thus helping in protecting the Ozone Layer. This quantity is evaluated as following:

- 100 Recovery machines will recover an average of 1 kg of refrigerant per day per machine;
- Based on 270 working days a year;
- 90 % of the recovered material that can be recycled; and
- Plus the 150 Manual Recovery Pumps to be used to recover some 85 grams of CFC-12 from domestic refrigerators also based on 270 working days and 80 percent recyclable,

The annual recycled CFC-12 would be 27.4 Tonnes

The following must be noted:

- The above amount does not include the amount of CFC-12 that might be recovered by technicians not included in the present programme but which will be accepted by the recycling centers created by the programme; and
- The amount that will be saved by improved servicing practices following the training workshops included in the present programme and in other training workshops is also not included in the above tonnage.

Placement of recovery machines and associated kits will be determined by evaluating the most effective locations with regards to their access to the largest and consistent volumes of CFC-12. With time, these

locations may change. The requirements and the machines would then be relocated to facilities, which have greater needs. Although there are many locations where CFC-12 is being handled, it is not economically feasible for each location to have recovery systems on-site all the time. On the other hand, the users of small quantities of CFC-12 will have a number of recovery machines available. These will be located in the different districts. Therefore the number of recovery machines considered in this programme is less than the number of sites handling CFC-12.

The major use of CFC-12 will be during the repair and maintenance of commercial and industrial refrigeration units as well as from domestic refrigeration units. It is expected that the commercial and industrial refrigeration units will be the larger source of CFC-12 as these units usually contain larger amounts of CFC-12 than that contained in domestic refrigeration equipment. The quantities of CFC-12 in domestic refrigerator units must not be neglected in this project, as the number of these units repaired per year is high.

It is worthy to note that the present (2001) price of CFC-12 is at least 4 US Dollars per kg and that of HCFC was 5 US Dollars per kg. These prices have already gone up earlier during a period when import of these chemicals was decreased. This situation will occur again when the quota system and the control of ODS will be effectively in place. These prices are a substantial percentage of the GDP per capita in the Armenian Republic. Along with the major source of recovered CFC-12 being from commercial and industrial refrigeration, the success of the present project is assured. It is worthy of note that one kg of HFC-134a is presently about 10 US\$.

3.1 Domestic, Commercial and Industrial Refrigeration

In view of the severe fluctuations in Voltage and frequent outages in the electricity supply during peak lighting hours, hermetically sealed domestic refrigeration equipment suffer premature winding failures. This is one of the main reasons for their breakdown. The present programme will also provide for refrigerant recovery bags for use to collect CFC-12 by the technicians who will be making house calls to repair and maintain domestic refrigerators.

If after a workshop receives a recovery machine and associated equipment it appears that it does not use the recovery equipment, then the Government will take that equipment from it and give it to another workshop that is willing to use it.

3.2 Mobile Air Conditioning (MAC) and Transport Refrigeration (TR)

A very small number of workshops in the country repair and maintain MAC. Consequently, an introduction on proper maintenance and repair of MAC and TR will also be given.

4. PROJECT MONITORING

In its capacity as co-coordinator of all activities related to the Montreal Protocol in the country, The Ministry of Nature Protection of the Armenian Republic is the overall monitor of the project. This entity will keep records of the amounts of Ozone Depleting Substances recovered and presented for recycling by each service center. A computer database will be set up to monitor the information received from the service centers. It should be noted that funds will be made available to the Ministry through the institutional strengthening project to allow them to carry out these activities.

With the assistance of the National Refrigeration Consultant under the Monitoring of RMP Project, the Ministry of Nature Protection of the Armenian Republic will ensure that the operation for most effective use of the above equipment is attained. In particular monitoring will make sure that:

- The recovery machines are distributed according to criteria of maximum recovery of CFC;
- all the equipment is properly used, kept and maintained;
- Proper records of the amounts of CFC recovered, recycled and reused are maintained.

It is to be noted that all the equipment supplied under this project is to be given to the end users on a grant basis. The title of ownership of the machines and equipment provided under the GEF will be kept by the Ministry of Nature Protection of the Armenian Republic throughout the duration of the project and then transferred to the users. The transfer will be subject to final evaluation of the activities carried out by the individual users.

5. PROJECT ACTIVITIES AND COSTS

5.1 Objectives of the Training Programme

Training will be given to the most qualified technicians who will receive recovery and recycling equipment as well as some of the teaching staff of centers that already teach and train in refrigeration. The successful philosophy of training the trainers, which ensures “self sustenance”, will be behind the training activities related to the present project. This is an extremely important capacity building component for users. The on-the-job training will improve the operational discipline and encourage recycling.

A Train the Trainers Programme will be organized and run to complement the supply of recovery and recycling machines to ensure their effective use. Training is a crucial aspect of that programme especially as the field of refrigeration is constantly changing due to the implementation of the Montreal Protocol.

It is assumed that with training, many situations where venting is today considered to be normal, will be eliminated. This will result in lowering the demand for CFC. Also, a leak is often discovered after charging the system. This charge is then vented. In such situations recharge may be done more than once with the consequence of venting large quantities of CFC. Currently, some servicing shops flush the system with CFCs and vent the flushed CFC prior to final charging. This practice is extremely wasteful and needs to be discontinued. With training in alternative technologies and maintenance techniques, these improper practices can be minimized and waste could be greatly reduced.

The training programmes given by the international consultant will benefit from previous training workshops held by UNDP in the context of, among others, the Montreal Protocol. UNDP has extensive information and expertise in the field of refrigeration. It is imperative that training is provided to all individuals who service and maintain refrigeration equipment. Otherwise it is unlikely that these technicians will learn about the Ozone issue and the many improved service practices when handling CFC and their alternatives.

A series of training sessions will be held to enable technicians to learn proper repair procedures. Training must include hands-on practice with special focus on leak detection.

Training will be the responsibility of the Ministry of Nature Protection of the Armenian Republic in close co-operation with the existing technical training workshop. One (1) international expert on refrigeration system servicing, maintenance and CFC recovery and recycling will be fielded as soon as the Recovery and Recycling equipment will arrive in the country.

The main tasks of the expert will be to:

- carry out specific training in Recovery and Recycling;
- general training activities for refrigeration systems, maintenance, recovery and recycling of CFC;
- assist organizations and technicians in evaluating their systems and advice on possible retrofitting of existing equipment using non-ODS.

5.2 Training Programme

The five (5) training sessions will be held in different parts of the country. Each one (1) day session / seminar will be held for (20 - 30) technicians. These sessions / seminars will include:

- The correlation between CFC emissions and depletion of the Ozone Layer;
- The consequences of Ozone Depletion;
- The production and supply trends of CFC refrigerants CFC-11, CFC-12 and R-502 as well as those of HCFC-22;
- Proper and safe handling of CFC;
- Recovery, Recycling and Reclaiming of ODS;
- General mistakes in maintenance leading to waste and release of CFC;
- Methods of installing recovery valves on existing equipment;
- Proper maintenance and housekeeping procedures, e.g., importance and methods of evacuation of systems before recharging, prevention and early detection of leaks, etc.; and
- Hands on training using the equipment supplied with emphasis on recovery and recycling and sound practice methodologies during service of the different systems.

The final outcome of this training may reveal that one of the largest reductions in venting was accomplished by providing the know-how and that with conservation measures the industry will realize substantial savings.

The trained technicians will train others after the departure of the UNDP international expert. This way continuity is guaranteed.

6. ANALYSIS OF THE PROPOSED APPROACH

The present programme proposal has the following characteristics:

- Rapid overall implementation;
- Low cost for both up-front and continuing operations;
- Technicians will have the opportunity to reuse the CFC that has been recovered and recycled;
- Availability of long term support through the technical centers;
- The Ministry of Nature Protection of the Armenian Republic will be responsible for monitoring the use of the equipment and the logbooks of the technicians. This should lead to a better understanding of the programme impact; and
- Since the Government maintains ownership of the units during the life of the programme, it is possible to redistribute the units to locations that have a greater need.

7. SPECIAL ARRANGEMENTS (AWARENESS)

Providing information and stimulating motivation are probably the least expensive and most effective way to reduce the amount of CFC released into the atmosphere. Part of the Ministry of Nature Protection of the Armenian Republic's mandate is to increase awareness on issues relating to Ozone layer protection.

8. RETAILER LICENSE SCHEME

This scheme, when adopted, will make it mandatory for organizations to possess a retailer's license in order to purchase CFC from wholesalers/importers. A pre-requisite for issuing such licenses will be that at least one technician of the organization has undergone training. Necessary precautions will have to be taken to avoid creating a black-market, once this scheme is implemented.

9. INSTITUTIONAL ARRANGEMENT

The Ministry of Nature Protection of the Armenian Republic will co-ordinate the implementation of this programme. Some of the training sessions in the programme will be conducted at the technical centers.

10. INPUTS

10.1 Equipment

The following criteria were used for the selection of the equipment:

- 100 workshops would receive a recovery unit and associated equipment, according to its needs;
- 150 sets of hand operated recovery pumps and bags will also be distributed to the workshops repairing domestic refrigerators, and
- In order to reasonably recycle the amounts of CFC-12 recovered from the workshops having recovery machines, 10 mobile recycling centers would be established.

Based on the above, the following equipment will be provided to the Ministry of Nature Protection of the Armenian Republic.

10.2 Equipment Needed for the Recovery of CFC-12 Refrigerant

- The recovery machines will be portable and will incorporate an over fill protection (OFP) device. Each machine will include as part of its equipment a 30 lb. Department of Transport (DOT) refrigerant recovery cylinder and appropriate hoses and tap valves;
- Recovery bags and manual recovery pumps with two hoses with tap valves for use with domestic refrigerators;
- 30 lb. CFC-12 recovery cylinders with two ports and OFP;
- CFC-12 recovery equipment kits. Each kit will include; 1 gauge manifold with hoses, 1 electronic leak detector, 2 service couplings, 1 piercing pliers, 2 pairs of goggles, 2 pairs of gloves, 1 thermometer, 1 set of service hoses, as well as an electronic weighing scale; and
- Maintenance and spare parts for the above.

10.3 Equipment Needed for the Recycling of CFC-12 Refrigerant

- Mobile single cycle CFC-12 recycling machines incorporating an OFP device and with capacity to fill automatically, in a single and continuous process or multiple passes, a 120-lb. cylinder. Each machine will incorporate an oil separator, 2 independent filters, (one for acid one for moisture and particles), automatic purging of non condensable gases, appropriate refrigerant gauge, hoses and a weighing scale;
- CFC-12 refrigerant identification kits to identify mixed refrigerants and assure that only the machines recycle CFC-12;
- 100 lb. CFC-12 refrigerant cylinders with dual port and OFP device;
- 1000 lb. CFC-12 refrigerant cylinders with dual port and relief valve will be made available to the recycling centers;
- Vacuum pumps to empty the cylinders;
- Leak detectors; and
- Maintenance and spare parts for the above.

11. DISTRIBUTION AND SITING OF THE RECOVERY AND RECYCLING EQUIPMENT

11.1 Distribution of Recovery Equipment

The recovery machines and equipment kits will be made available, under the supervision of the Ministry of Nature Protection of the Armenian Republic to refrigeration service workshops and firms maintaining their own installations.

The recovery cylinders, (2 each), and sets of recovery bags will be distributed among the recovery centers. The sets of recovery bags will be given to those centers that mainly maintain domestic refrigerators. The remaining will be given to the recycling centers, along with the 100 lb. and 1000 lb. cylinders, for use when large refrigeration and air conditioning systems are serviced.

11.2 Siting of the Recycling Centers

The recycling centers will be situated within the installations of entities with refrigerant handling experience such as the principle refrigerant distributors, who will also be responsible for the operation of the centers. The final location of the centers will be determined before the equipment arrives in the country.

11.2.1 Conditions for the Siting of the Recycling Centers

Each of the refrigerant suppliers and the technical institutes will be invited to submit its proposal and qualifications to the Ministry of Nature Protection of the Armenian Republic who will have the responsibility for deciding the correct site for the recycling centers.

The recycling centers will need protected but properly ventilated areas for the siting of the recycling equipment and for the storage of the recovered and recycled refrigerant. The chosen operator will have to possess adequate equipment for the storage of the un-recyclable refrigerant (i.e. CFC mixtures) until means are found for their reclaim or destruction.

The technicians responsible for the operation of the recovery center must have certified experience in handling refrigerants.

12. REDUCTION IN CONSUMPTION

Based on the number of recovery machines and refrigerant recovery bags that will be operating, the quantity of CFC-12 that will not have to be imported in the country, and thus manufactured in the future, thanks to the recovery / recycling efforts in this programme, is estimated as **27.4 Tonnes per year.**

13. OPERATIONAL, QUALITY AND PRICING CONTROLS

13.1 Operational Control

The Ministry of Nature Protection of the Armenian Republic will have responsibility for implementing and overseeing the recovery and recycling programme. The duties of the Ministry of Nature Protection of the Armenian Republic will include distributing the recovery equipment, siting the recycling centers, monitoring the amount of CFC recycled and redistributing the equipment, when necessary. As stated earlier that funds will be made available to the Ministry through the institutional strengthening project to allow them to carry out these activities.

13.2 Quality Control

Samples of recycled refrigerant will be analyzed for cleanliness under the supervision of the Ministry of Nature Protection of the Armenian Republic.

13.3 Pricing of Recycled Refrigerant

The recycled refrigerant will be returned, as such, to the recovery network at a price that shall not be more than that which is reasonable to cover the operational costs of the recycling centers including; collection of recovered refrigerant, operating space, storage areas, man hours and redistribution of the recycled refrigerant. This price will be agreed upon under the supervision of the Ministry of Nature Protection the Armenian Republic.

14. EXPECTED PROGRAMME RESULTS

The following are results expected from this programme:

- improved training of technicians in the refrigeration and air conditioning sector thereby reducing leaks and emissions during servicing and maintenance;
- the recovery of refrigerant before retrofitting or dismantling and scrapping operations;
- creation of the necessary infrastructure within the country for the collection, recycling and distribution of all CFC recovered by whatever means;
- encouragement to service workshops and companies to maintain their own systems and/or equipment, whether directly included in this programme or not, to recover CFC-12 during servicing; and
- Expected reduction of a minimum of 13 Tonnes / year of CFC-12 purchased.

15. TIMETABLE

TASK / PERIOD	TIME FOR COMPLETION													
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14
1. PREPARATION														
GEF Approval	xx													
Procurement preparation	xx													
Arrival of equipment		xxx												
2. DEMONSTRATION SEMINARS			xx											
3. STARTING RECOVERY / RECYCLING Distribution of equipment			xx	xxx										
4. MONITORING Setting up Monitoring System			xx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx		
5. PROJECT REVIEW AND REPORTING													xxx	xxx

16. CO-ORDINATING NATIONAL BODY

The National Ozone Office of the Ministry of Nature Protection of the Armenian Republic (Ozone Focal Point) will be the coordinating body for this project.

17. PROGRAMME COSTS

17.1 Demonstration Seminars

Item	Total
One International Consultant: fees, travel, DSA and other expenses	\$15 000

	National Consultant and Local Travel	\$2 500
	Logistical arrangements for seminars including interpreters	\$10 000
	Duplication of Technical Literature	\$1 250
	SUB-TOTAL	\$28 750

17.2 Recovery and Recycling Equipment

Units	Recovery and Recycling Equipment	Total Cost
	CFC-12 EQUIPMENT TO BE USED BY THE WORKSHOPS	
100	Recovery Machines	\$100 000
150	Recovery Bags	\$4 050
150	Manual Recovery Pumps with two hoses and tap valves	\$33 000
100	Refrigerant Recovery Cylinders with two ports	\$6 000
250	Refrigerant Recovery Cylinders with two ports and OFP	\$18 750
250	Recovery Equipment Kits Including Leak Detectors	\$162 500
	CFC-12 EQUIPMENT TO BE USED AT THE RECYCLING CENTERS	
10	Recycling Equipment	\$38 000
10	Refrigerant Identification Kits	\$6 500
10	Vacuum pumps to empty the cylinders	\$3 500
30	100 lb. Refrigeration Cylinders with two ports and OFP	\$6 000
10	1000 lb. Refrigerant Cylinders with two ports	\$10 000
	Sub-total	\$388 300
	MAINTENANCE AND SPARES	\$38 830
	FREIGHT COSTS	\$38 830
	CONTINGENCIES (10 % OF EQUIPMENT+MAINTENANCE+SPARES+FREIGHT)	\$46 596
	SUB-TOTAL	\$512 556

17.3 Incremental Operating Costs

All operating costs including; transportation of cylinders to and from the recycling centers, maintenance of the equipment that will be supplied under the present programme shall be included in the sale price of the recycled refrigerant.

As part of its responsibilities, the National Ozone Office of the Ministry of Nature Protection of the Armenian Republic (Ozone Focal Point), shall monitor the programme and ensure that the sale price of the recycled refrigerant is balanced in such a manner that neither financial loss nor profit shall be incurred by the operators of the recycling centers.

17.4 Monitoring System Costs

The activities under this heading are part of the funds approved as a separate project that is included in the Refrigerant Management Plan.

Project Costs

17.1	DEMONSTRATION SEMINARS	\$28 750
17.2	Recovery and Recycling Equipment	\$512 556
17.4	Project Evaluation Mission	\$10 000
	TOTAL PROJECT COST (INCREMENTAL COST)	\$551 306

18. COST EFFECTIVENESS

Project Cost (incremental Cost)	\$551 306
--	------------------

Reduction inCFC-12 consumption in kg / year	27.4
COST EFFECTIVENESS FOR ONE YEAR IN US \$ PER KG	20.12 *

- It is to be noted that the Armenian Republic is a LVCC therefore the cost effectiveness threshold does not apply.

19. PROGRAMME REVIEW AND REPORTING

The programme will be the object of tripartite review consisting of representatives from the Government, the Ministry of Nature Protection of the Armenian Republic, as the Executing Agency, and UNDP. This review will be done at least twice during the life of the programme. The national co-coordinator for the programme or the official responsible for the execution of the programme will prepare and submit for each of the reviewing parties' progress and evaluation reports. During the implementation of the programme, other similar reports that may be requested shall be prepared.

A final programme report will be prepared to be considered at the final review committee meeting of the programme. A draft of that final report will be prepared in advance so that all parties may examine its contents before the final meeting. The final draft will be obtained within two weeks after this final meeting. It will incorporate all the agreed final observations, technical and otherwise.

ARMENIAN REPUBLIC

REFRIGERANT MANAGEMENT PLAN

MARCH 2002

Prepared by: Dr. Adham KHALIL, Eng. / NOU

Date: March 2002

ARMENIAN REPUBLIC REFRIGERANT MANAGEMENT PLAN

1.0 EXECUTIVE SUMMARY

The baseline for CFC's (1995-97 average) amounts to 196.5 ODP Tonnes. According to the Country Programme the CFC consumption in the refrigeration sector has fallen to 158.21 ODP Tonnes in 2000. The estimated consumption of all ODS was 173.48 ODP Tonnes in 2000.

However, in spite of these positive results, the Armenian Republic will need assistance to comply with its chosen benchmarks that happen to coincide with those of Article 5. Thus, the country needs assistance in order to meet the 50% reduction measure in 2005. This document is the first RMP for the Armenian Republic and is submitted to the GEF with the purpose to assist the country to meet the Montreal Protocol obligations.

Several legislative measures were already in the process of being put into place in the Armenian Republic, which should allow a successful phase out of the Refrigeration Sector, if coupled with the activities that are proposed within this RMP document.

A checklist was made to make sure that Decision 31/48 of the Executive Committee was fully taken into account and is included in the Annex to this document. The Government of the Armenian Republic is fully aware of its implications as described in this checklist.

After careful consideration, the following activities are requested for financial assistance from the Multilateral Fund:

PROJECT TITLE	Budget
a. Institutional Strengthening Project and Capacity Building including Customs Training - UNEP	US\$ 252,569
b. Monitoring of the Activities in the RMP - UNDP	US\$ 54,000
c. Implementation of train the trainer programme and national demonstration programme. - UNEP	US\$ 144,612
d. Recovery/Recycling Programme - UNDP	US\$ 595,410
e. Awareness/Incentive Programme for Commercial /Industrial End-User Sector - UNDP	US\$ 482,369
f. SAGA - Phase-out of CFC11 & CFC-12 in the Manufacture of Commercial Refrigeration Equipment - UNDP	US\$ 170,716
TOTAL	US\$ 1,699,676

Note 1: The institutional strengthening request is being submitted at the same time as the RMP.

While the activities of the that project will have an impact on the RMP, it is usually not considered as part of the RMP.

Note 2: As per ExCom of the GEF Decision 31/48, "e" equals 50% of "b + c +d+f".

Note 3: Funds requested from the GEF ("a" through "f") amount to US\$ 1,699,676

--(US\$ 1,302,495 for UNDP and US\$ 397,181 for UNEP)

Note 4: All budget figures in above table include 8 % support cost

2.0 Status of the country with regard the Montreal Protocol

Armenia became a Party to the Montreal Protocol on 1 October 1999 as a non-Article 5 (1) country (i.e. developed country). The documentation for the ratification of the London Amendments to the Montreal Protocol has been prepared.

3.0 Status of Country Programme:

The Country Programme for the Phasing Out of Ozone Depleting Substances (ODS) for the Armenian Republic was being prepared at the same time as the present Refrigerant Management Plan (RMP). The base year for the data in both documents was 2000.

The Country Programme reflects institutional and political activities of the Government of the Armenian Republic to implement the undertaken responsibility with regard to the process of the phasing out of ODS consumption and production in the shortest possible time taking into account the following:

- availability of substitute substances to the CFC that are in use in the country;
- residual life of the existing equipment that use CFC;
- Enactment of legislation that will monitor and control import and use of CFC without creating a black market for these substances.

A summary of the Government Action Plan as per the Country Programme is given hereunder:

- Setting up a Coordinating Group on the Implementation of the Montreal Protocol
- Announcement of phase-out schedule
- Setting up a National Ozone Office
- Official paper publication of the Customs new subheadings
- Introducing import license scheme for ODS (on reducing quota)
- Introducing User Permit Scheme
- Introducing import license scheme for equipment containing ODS
- Granting duty concession for the import of ODS substitutes and equipment containing ODS substitutes

4.0 Institutional Framework and the Status of Institutional Strengthening Project

4.1 Institutional Framework

The responsible governing body within the Government of the Armenian Republic in the field of environmental protection is the Ministry of Nature Protection of the Armenian Republic. There are some duties regarding nature protection that are being

implemented by the Ministry of Healthcare, Ministry of Agriculture and Water Industry as well as by the State Departments of Geology and Forestry.

In accordance with the Law of the Armenian Republic “The ratification of the Vienna Convention on the Ozone Layer Protection and the Montreal Protocol on Substances that Deplete the Ozone Layer”, the Ministry of Nature Protection has been designated to be the responsible national authority that for the implementation of the Vienna Convention and the Montreal Protocol.

The Ministry of Nature Protection of the Armenian Republic has a branched organizational structure including regional divisions throughout the administrative areas of the Republic.

An interdepartmental commission will be established that shall include experts from the Ministry of Nature Protection as well as from other departments and Ministries such as the Ministry of Industry and External Trade, the Ministry of Foreign Affairs, the Ministry of Internal Affairs, the Ministry of Finance, the State Customs Department, members of the public and representatives of the private sector. They shall coordinate the overall activities with regard to substitution of existing ODS to new alternatives.

A National Ozone Office (NOO) is to be established in the Ministry of Nature Protection. This Office shall be a responsible for data collection, project management, preparation of documents for the Commission, annual reports to the Ozone Secretariat and to the Implementing Agencies and the GEF Secretariat.

Local consultants will provide technical assistance and will be involved in a process of ODS substitution. A coordinator of the National Ozone Office will be responsible for all the activities related to the NOO and TOR for each expert and assistant.

4.2 Institutional Strengthening Project

The Institutional Strengthening Project has not yet started as the Armenian Republic Country Programme for the Phase out of Ozone Depleting Substances according to the Montreal Protocol was being prepared at the same time as the present document.

Once financial and technical assistance is received from the GEF, the establishment of the Institutional Strengthening Project shall be undertaken.

4.3. Legislative Aspects.

The Government through the efforts of the Ministry of Nature Protection, has already started the process of establishing legislative measures to control import of ODS and equipment that contain them.

5.0 Justification for the RMP

This RMP was formulated in compliance to Decision 22/25 taken at the Twenty Second Executive Committee Meeting of the Multilateral Fund for the Implementation of the Montreal Protocol. The development of the RMP gives rise to a better understanding of each of the actions taken during the development of this plan.

The need for a Refrigerant Management Plan (RMP) stems from the strategy to contain, recover and recycle refrigerant, making provision for the critical stocks for the service tail through internal conservation techniques as well as external suppliers, if necessary. It entails an awareness / end-user incentive programme and is a critical management tool for the country for a smooth transition to non-ODS.

As described above and in spite of the decrease in ODP consumption over the last few years, Armenian Republic will still need assistance to comply with the 50% reduction measure in 2005, and even more so to comply with further reduction measures. The country may not be able to meet the control measures of the Montreal Protocol thus the need of this RMP with associated activities is of utmost importance.

With the improvement of the economic situation in the country and an increase in the amount of ODS imported unofficially into the country over the last few years and the unavailable know-how within customs to monitor, control and record the quantities of these chemicals entering the country, there is an obvious increase of CFC on the market. Therefore the approval of further regulations on importation and consumption of ODS coupled with the training of Customs Officers as well as the awareness/incentives to end-users to convert their equipment to using non ODS will ensure a smooth phase-out of ODS in Armenian Republic.

The new decisions pertaining to RMP's taken at the 31st meeting of the Executive Committee (decision 31/48) were also taken into account. Armenian Republic did not yet have an RMP, and therefore falls under section "B" of that decision (i.e. New RMP's). Annex 1 of this document illustrates that all the concerns of this decision were fully addressed.

6. The Refrigeration Sector

6.1. Estimated 2000 Consumption of Ozone Depleting Substances in the Refrigeration Sector

SUBSTANCE	TONS	ODP	ODP TONS
CFC-11	2	1	2
CFC-12	155.51	1	155.51
HCFC-22	31	0.055	1.7
TOTAL			158.21

6.2. Use of CFC-12 – Summary Table

	Nr of units	Nr of units charged per year	Total ODS use in Tons
DOMESTIC REFRIGERATORS (see 6.3 below)	1,140,000	205,200	123.12
COMMERCIAL REFRIGERATION (see table 6.3 below)	20 940	295	15.27
INDUSTRIAL REFRIGERATION (see table 6.3 below)	71	115	1.32
TRANSPORT REFRIGERATION (See table 6.3. below)	11,199	113	9.81
PRODUCTION OF REFRIGERATION UNITS (See table 6.3. below)	> 6,000		6
TOTAL			155.51

6.3 Use of CFC-11 and CFC-12 by sub sector

Estimate of CFC-12 in the Refrigeration Sector

#	Application	Refrigerant	ODP	Estimated number	Estimated percentage repaired annually	Estimated number repaired annually	Estimated amount of Refrigerant used to repair one unit in grammes	Estimated amount of Refrigerant used annually in ODP Tonnes
1	Domestic Refrigerators	CFC-12	1	1,140,000	18	205,200	600	123.12
2	Domestic Freezers used for ice cream	CFC-12	1	5,000	18	900	400	0.36
3	Display Refrigerators	CFC-12	1	9,500	24	2,280	1,600	3.65
4	Vertical freezers	CFC-12	1	3,800	25	950	1,400	1.33
5	Shelf refrigerators	CFC-12	1	4,200	23	966	6,500	6.28
6	Chillers	CFC-12	1	3	100	3	100,000	0.30
7	Refrigerated Wagons (stationary)	CFC-12	1	16	13	2	80,000	0.17
8	Fruit Refrigerated Units	CFC-12	1	1,600	30	480	6,500	3.12
9	Large Food Refrigerated Rooms	CFC-12	1	89	100	89	17,500	1.56
10	Food production and milk products and sausages	CFC-12	1	56	100	56	20,000	1.12
11	Ice-cream Production Refrigeration Equipment *	CFC-12	1		15			0.20
12	SAGA - Assembly of Commercial Refrigerators	CFC-12	1	6,000				4.50
13	Assembly of Refrigerators							1.50
14	MAC	CFC-12	1	7,383	75	5,537	1,500	8.31
TOTAL							155.51	

Estimate of CFC-11 in the Refrigeration Sector

#	Application	Refrigerant	ODP	Estimated number	Estimated amount of Refrigerant used annually in ODP Tonnes
12	SAGA - Assembly of Commercial Refrigerators	CFC-11	1	6,000	2

Estimate of HCFC-22 in the Refrigeration Sector

#	Application	Refrigerant	ODP	Estimated number	Estimated percentage repaired annually	Estimated number repaired annually	Estimated amount of Refrigerant used to repair one unit in grammes	Estimated amount of Refrigerant used annually in ODP Tonnes
1	Window A/C	HCFC-22	0.055	42,000	20	8,400	800	0.37
2	Split units	HCFC-22	0.055	8,000	5	400	1,500	0.03
3	Chillers	HCFC-22	0.055	15	100	15	30,000	0.025
4	Refrigerated Trucks for Ice Cream	HCFC-22	0.055	120	75	90	7,000	0.035
5	Large Food Refrigerated Rooms	HCFC-22	0.055	21	75	16	45,000	0.039
6	Food production and milk products and sausages	HCFC-22	0.055	24	75	18	90,000	0.09
7	Ice-cream Production Refrigeration Equipment *	HCFC-22	0.055		20	-		0.15
8	Assembly of Refrigerators	HCFC-22	0.055			-		0.12
9	Other	HCFC-22	0.055			-		0.85
TOTAL								1.7

6.4. TECHNICIANS AND WORKSHOPS

Estimated number of technicians that repair and maintain refrigeration equipment	750
Estimated number of workshops that repair and maintain refrigeration equipment	42

7.0

Current Situation

Armenian Republic has been totally dependent on the importation of all ODS to meet its domestic needs. The Refrigeration Sector accounts for 89.9% of the current CFC consumption in the country. The Sector includes, among others, domestic appliances, air-conditioning systems and cold storage systems.

The high consumption of CFC-12 for servicing of domestic and commercial refrigerators may be explained by the relatively old age of most of the units and the need for training of the refrigeration technicians.

Based on surveys completed in January 2002, the prices of refrigerants are as following:

Trade Name	Name	Market Price per kg US \$ in January 2002 Excluding Taxes	Market Price per kg US \$ in 2000 Excluding Taxes
CFC-12	CFC-12	4	2.5
R-22	HCFC-22	5	5
R-134a	HFC-134a	10	

8.0 *Elements of Action Plan in each sub sector with a precise and realistic timetable*

8.1. Justification for the activities being proposed.

The purpose of the RMP is to plan lasting improvements in the maintenance and servicing procedures currently being employed in the country, to significantly minimize the emission of all refrigerants (particularly CFC-12) and to ensure the implementation of the Action Plan of the Government aimed at phasing-out controlled substances (in this context ODS refrigerants) by the year 2009. With the proposed action plan, the Government of Armenian Republic hopes to reduce the consumption of CFC-12 to negligible amounts from the year 2009 onwards, which is four years faster than the requirements under the Montreal Protocol.

As indicated in paragraph 2, the CFC baseline for Armenian Republic is 196.5 ODP Tonnes and according recent reports, ODS consumption in Armenian Republic in 2000 has decreased to about 173 ODP Tonnes. While these results are very encouraging, they are mainly due to the economic situation in the country. With the improvement of the economic situation it is expected that the ODS consumption will increase if no actions are taken. The Government will still have to make efforts to meet its benchmark of 50% by reduction by 2005 as for Article 5 Parties. This means that the activities are needed if the Armenian Republic wants to comply with the Montreal Protocol stipulations for the 2005 reduction of 50% and 2007 reduction of 85% as for Article 5 Parties.

It should also be noted that during a recent UNDP/UNEP visit, the Government emphasized the urgent need for the activities in the Country Programme and the RMP in order to meet its obligations. With the risk of an increase in the amount of ODS imported unofficially into the country, and the unavailable know-how within customs to monitor, control and record the quantities of these chemicals entering the country, there is a real possibility to have an increased availability of CFC's on the market. Therefore the approval of further regulations on importation and consumption of ODS coupled with the activities proposed in this RMP will ensure a smooth phase-out of ODS in the Armenian Republic. Detailed justification for each proposed activity is provided in the following bullet points:

- **Legislation for the import of ODS (quota system).**
Justification: Stricter enforcement of the legislation introduced so far that imposes that individual requests for import must be cleared by the National Ozone Office and that puts limits to the amounts that can be imported.
- **Custom Training program.**
Justification: With 14 border entry points in the country and customs officers that are presently at a loss on how to monitor the import of ODS, the need for this US\$ 47 960 as part of the US\$ 252 569 for the Institutional Strengthening Project is proposed. This activity forms an integral part of all RMP.
- **Recovery and Recycling of CFC-12.**
Justification: The Commercial and Industrial sub-sector uses some 89.9% of the ODS consumed. In order to save the CFC-12 from being vented and being able to maintain the refrigeration equipment beyond the time when CFC-12 will no longer be available, it is imperative that a Recovery and Recycling be implemented as soon as possible. The proposed project will save some 27.4 ODP Tonnes of CFC-12. A US\$ 595 410 project is included. Since the price of CFC's is relatively high and labor cost is comparatively low, the incentive to recover/recycle the used refrigerant will be high.
- **Train the Trainers of Refrigeration Technicians.**
Justification: Hand in hand, with recovery/recycling operations there is an urgent need for trained technicians that specialize in the modern and proper techniques of maintenance and servicing refrigeration equipment. Train the Trainers Project in general good practices in repair and maintenance in included A modest project (US\$ 144,612) is being proposed.
- **Monitoring project.**
Justification: This small project should ensure that all activities of the RMP are correctly being implemented and followed-up. The project cost is US\$ 54,000 that will mostly be used for the services of a National Consultant that will assist the Ozone Unit.
- **Awareness and Incentive Programme for the end-users.**
Justification: a large amount of ODS is being consumed through leaks and maintenance of end-user systems in the Armenian Republic. To tackle this, an innovative type of public awareness and incentive Programme is being proposed, and is being presented jointly with this RMP. The cost of this project is US\$ 482, 369.

PROJECT TITLE		Budget
a. Institutional Strengthening Project and Capacity Building including Customs Training - UNEP		US\$ 252 569
b. Monitoring of the Activities in the RMP – UNDP		US\$ 54 000
c. Implementation of train the trainer programme and national demonstration programme. – UNEP		US\$ 144 612
d. Recovery/Recycling Programme – UNDP		US\$ 595 410
e. Awareness/Incentive Programme for Commercial /Industrial End-User Sector – UNDP		US\$ 482 369
f. SAGA – Phase-out of CFC11 & CFC-12 in the Manufacture of Commercial Refrigeration Equipment - UNDP		US\$ 170 716
TOTAL		US\$ 1 699 676

9.0 Elements of Action Plan in each sector with a precise and realistic timetable

9.1 SCHEDULE OF ACTIVITIES

Activity	2002			2003			2004			2005			2006			2007		
	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2
a. Institutional Strengthening Project and Capacity Building including Customs Training – UNEP			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
a.i Public awareness																		
a.ii Customs Training – UNEP			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
b. Monitoring of the Activities in the RMP –UNDP																		
c. Implementation of train the trainer programme and national demonstration programme. – UNEP				x	X	X	X	X	X	X	X	X						
d. Recovery/Recycling Programme – UNDP			x	x	X	x	x	x	x	x	x	x						
e. Awareness and Incentive Programme for Commercial /Industrial End-User Sector – UNDP				x	X	X	X	X	X	X	X	X	x	x	x			
f. SAGA – Phase-out of CFC11 & CFC-12 in the Manufacture of Commercial Refrigeration Equipment – UNDP			x	x	X	x	x	x	x	x								

Apart from the obvious use of the following table in giving dates and costs of actions, the spreadsheet will be used by the Focal Point as a follow-up tool for the activities and a tool to prioritize the actions.

It is to be noted that the phase-out scenario shown in the following tables is a theoretical one. It does not include CFCs on the market coming from unknown sources.

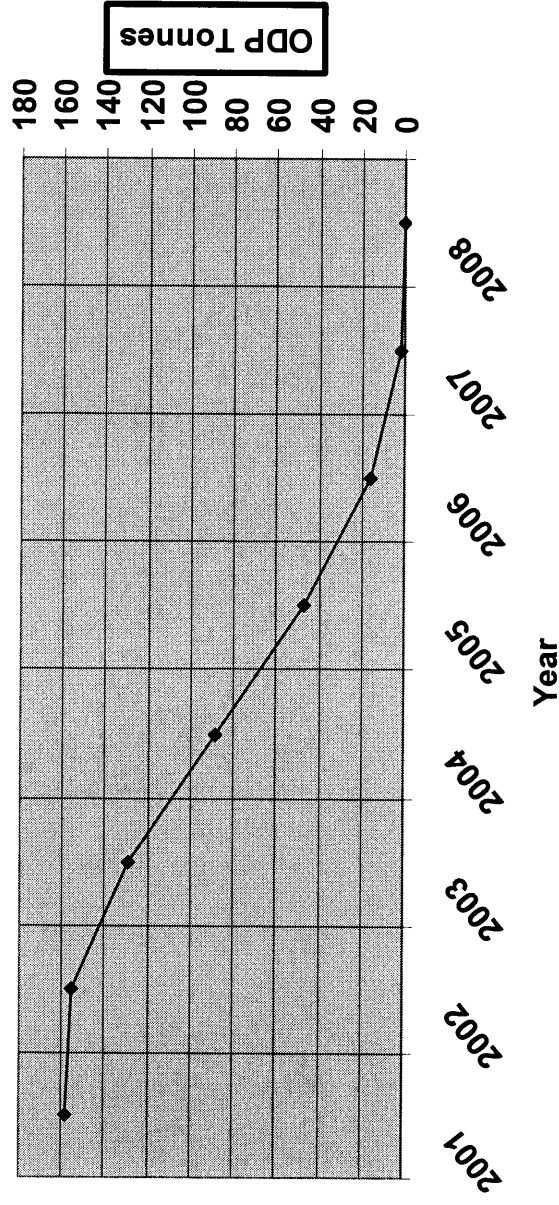
9.2 Elements of Action plan in Each Sector with precise and realistic Timetable

No.	ACTION / EVENT	Budget (US\$) incl. Support cost	IMPACT OR SITUATION	DATE OF ACTION	ODP IN TONNES/YEAR	ODS REDUCED IN TONNES (cumulative – see next table)	REMAINING ODS IN TONNES
Present Consumption							158.21
a.i	a. Institutional Strengthening Project and Capacity Building including Customs Training – UNEP	Not considered as part of RMP even though its actions will contribute to phase-out.		2002			
a.i	Public awareness		Decrease ODS use	2002- 2006			
a.ii	Customs Training – UNEP		Decrease ODS use	2002- 2003			
b.	Monitoring of the Activities in the RMP –UNDP	54,000	Decrease ODS use	2002- 2006			
c.	Implementation of train the trainer programme and national demonstration programme. – UNEP	144,612	Improved control of Consumption as well as its reduction. Improved reporting	2002	3.0		155.51
d.	Recovery/Recycling Programme – UNDP	595,410	Its actions will accelerate phase-out in other components of RMP.	2002	27.4		127.81
e.	Awareness and Incentive Programme for Commercial /Industrial End-User Sector – UNDP	482,369	Decrease ODS use	2002	5.0		122.81
f.	SAGA – Phase-out of CFC11 & CFC-12 in the Manufacture of Commercial Refrigeration Equipment – UNDP	170,716	Decrease ODS Consumption	2002	6.0		116.81
***	TOTAL RMP Related Activities (i.e. from item through f.	1,699,676			41.4		

No.	ACTION / EVENT	Budget incl. Support cost	IMPACT OR SITUATION	CONSUMPTION OF ODS IN 2008								
				2002	2003	2004	2005	2006	2007	2008	TOTAL	
		US\$										
A	Institutional Strengthening Project.		Not considered as part of RMP even though its actions will contribute to phase-out.									
a.i	Public awareness		Decrease ODS use	1	1	1	1	1				5
a.ii	Customs Training – UNEP		Decrease ODS use	1	3	4	5	2	1			16
b.	Monitoring of the Activities in the RMP –UNDP	54,000	Decrease ODS use		1	2	3	2	1			9
c.	Implementation of train the trainer programme and national demonstration programme. – UNEP	144,612	Improved control of Consumption as well as its reduction. Improved reporting	1	2	3	3	2				11
d.	Recovery/Recycling Programme – UNDP	595,410	Its actions will accelerate phase-out in other components of RMP.		18	25	20	15	10	2		90
e.	Awareness and Incentive Programme for Commercial /Industrial End-User Sector – UNDP	482,369	Decrease ODS use		1	3	3	3	2	.2		12.2
f.	SAGA – Phase-out of CFC11 & CFC-12 in the Manufacture of Commercial Refrigeration Equipment – UNDP	170,716	Decrease ODS Consumption			3	6	6				15
SUBTOTAL:				-	3	26	3	26	41	2.2		158.2
***	Cost to GEF	1,447,107	Remaining ODP at the end of the year	155.2	129.2	88.2	47.2	16.1	2.2	-		689.1

Note. The consumption will be able to be eliminated by the end of 2007 with the implementation of the projects defined in this RMP. It should also be noted that the tonnage for the non-investment activities are only vague estimates of their indirect ODP-reduction impact.

Consumption Projection



10.0 Institutional framework - existing or needed

The institutional Strengthening project will start as soon as funds are received by the country. The National Ozone Office will be created and data will be collected and transmitted to the Ozone Secretariat and the Multilateral Fund Secretariat.

11.0 Project List

The list of projects was already mentioned in the executive summary, as well as in the tables of paragraph 9.2. A short justification for each activity is provided for in paragraph 8.1, and is further elaborated upon in each respective project document which forms part of this RMP.

Annex 1 – Checklist to make sure Decision 31/48 is fully taken into account.

(1) *that the project preparation phase for RMPs should, as intended by the existing guidelines, include a full survey of CFC consumption in all sub sectors, the development of a comprehensive government phase-out strategy and a commitment by the government to enact regulations and legislation required for the effective implementation of activities to phase out the use of CFC refrigerants. To enable these preparatory activities, including the development of legislation and regulations, to be completed in full, the funding provided for the project preparation phase should be double the level traditionally provided;*

The National Ozone Office in the Armenian Republic will be created as soon as funds are received for this purpose. This document was prepared following two missions by an international consultant under mandates from UNDP and UNEP. A national consultant was recruited under a MOU by UNEP to survey some end-user enterprises in the commercial and industrial refrigeration sector. The draft RMP was finalized with the National Ozone Team further to a series of discussions in the Armenian Republic.

(2) *In addition, when preparing this RMP, the following factors were duly taken into account:*

(i) *The Government of the Armenian Republic has chosen benchmarks that happen to coincide with the phase-out schedule of Article 5 Parties. Current and forecast future consumption in relation to the freeze, 50% cut in 2005, 85% cut in 2007 and phase-out in 2010 were taken into account, and the size of consumption cuts in the refrigeration sector required to meet these targets were calculated;*

The tables in paragraph 9 of the RMP shows that the various activities being proposed, together with the ongoing legislative measures, would reduce to consumption of CFC's in this sector to negligible levels from the year 2006 onwards.

(ii) *forecast cuts in consumption attributable to the activities already approved under the RMP, including training activities and recovery/recycling were included;*

There were no past approvals for Armenia.

(iii) *it was ensured to the maximum extent possible that the current and expected future consumption of all sub sectors, including the informal sector, small and medium-sized enterprises and mobile air conditioners, were included in the review;*

As described in the above paragraph (1), surveys were undertaken to make sure to the maximum extent possible that the whole sector was covered.

(iv) *for each activity identified, the cost and means of funding, including national financing was duly considered;*

Funding for each proposed activity was duly considered in paragraph 11.2 of the RMP. National financing will be provided on an “in-kind” basis only.

Annex 1 – Continued.

- (v) *the RMP includes adequate provision for monitoring and reporting on progress;*

A separate request for monitoring the activities of the RMP was included in the RMP (see paragraph 11.2).

- (3) *Since this RMP includes the 50% extra funding, we also made sure that*
 - (i) *the justification for the activities to be funded in the context of the country's national phase-out strategy is included;*

Paragraph 8.1 in the RMP provides detailed justification for each of the activities.

- (ii) *a clear explanation was given of how this funding, together with the initial RMP funding and steps to be taken by the government, will ensure compliance with the Protocol's reduction steps and phase-out;*

The table in paragraph 9 in the RMP provides the link with the overall phase out schedule in this sector.

- (iii) *A commitment was given to achieve, without further requests for funding for the RMP, at least the 50% reduction step in 2005 and the 85% reduction step in 2007. This shall include a commitment by the country to restrict imports if necessary to achieve compliance with the reduction steps and to support RMP activities;*

The transmittal letter from the Government states their commitment in this regard.

- (iv) *a commitment was given to annual reporting of progress in implementing the RMP and meeting the reduction steps;*

The project for monitoring the RMP will ensure that this annual reporting will take place.

- (v) *That it will review in 2005 whether further assistance is needed for the post-2007 period, and what assistance the Fund might consider at that time to enable full compliance with the Protocol's phase-out requirements.*

This exercise will be undertaken when the time comes.

- (4) *that in lieu of the ability given to already approved RMPs to request additional funds, the total level of funding for the implementation of new RMPs could be increased by up to 50% compared to the level of RMP funding typically approved to date, with flexibility for the country in selecting and implementing the RMP components which it deems most relevant in order to meet its phase-out commitments. With the exception of the post-2007 phase noted in section A, subparagraph (d) above, no further funding beyond this level, including funding for retrofits, would be considered for activities in this sector;*

The Government has fully understood this aspect, as mentioned in their letter of transmittal of the RMP.