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Programme**



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

Seventeenth Meeting
Montreal, 26-28 July 1995

COUNTRY PROGRAMME: MALTA

This document consists of:

- Transmittal Letter from the Government of Malta
- Country Programme Cover Sheet
- Country Programme

Date: 5th. June 1995

**Chief Officer
Secretariat of the Multilateral Fund
for the Implementation of the Montreal Protocol
1800 McGill College Ave, 27th Floor
Montreal
Quebec
Canada**

Dear Sir,

RE: LETTER OF TRANSMITTAL: MALTA COUNTRY PROGRAMME

I have the honour to present to you the Country Programme for Malta. The lead agency responsible for co-ordinating the preparation of this Country Programme has been the Environment Protection Agency, housed within the Ministry for the Environment.

In your review of this Country Programme, please be aware that Malta is submitting this document as a Party to the Montreal Protocol on Substances that Deplete the Ozone Layer and is operating under paragraph 1 of Article 5.

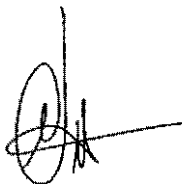
After careful deliberation as to the actions that Malta should take in response to the Montreal Protocol, the Government of Malta has outlined a clear agenda and proposed approach. The Government is firmly committed toward implementing these actions which specific action plan are detailed on pages 30 - 31 of the Country Programme.

With this Country Programme the Government of Malta is including three projects for consideration and approval by the Executive Committee. These projects are in relation to

- a) Institutional Strengthening
- b) Training of Refrigeration and Air-conditioning service technicians.
- c) Procurement of Equipment for the Recovery and Reclamation of ODS's in the Refrigeration and Air-conditioning sectors.

Further, the Government fully intends to monitor compliance with the Montreal Protocol. If it appears that actions in the Country Programme are insufficient to phase out ozone depleting substances as stated, the Government will take additional measures to ensure compliance, incorporate these new measures into the Country Programme and submit this to the Executive Committee.

Please accept my sincerest regards,



Louis Vella
Director
Environment Protection Department

COUNTRY PROGRAMME COVERSHEET

Country: MALTA

Lead National Agency: Environment Protection Department,
Government of Malta

Participating
Implementing Agency: UNEP

1. Phase Out Schedule

Substance	Current consumption calendar 1994 (Tonnes x ODP)	Planned total consumption 1995 until phase out (Tonnes x ODP)	Planned year for complete phase out
Annex A Gp I			
CFC - 11	4.8	12.7	1999
CFC - 12	21.2	92.0	1999
CFC - 113	32.0	148.1	1999
CFC - 114	0.0	0.0	DONE
CFC - 115	3.1	8.4	1999
TOTAL	61.1	261.2	
Annex A GpII			
All Halons	0	0	Done
Annex B Gp III			
Methyl Chloroform	2.0	3.5	1999

2. **Government Action Plan**

Action	Responsibility	Timing
1. Establish Ozone National Team	Env. Prot. Department.	Done
2. Establish National Ozone Office	Env. Prot. Department.	1995
3. Develop & implement public awareness campaign	National Ozone Office	1996 - 1998
4. Strengthen existing ODS import licence system	Customs/ Env.Prot. /Trade	1996
5. Develop user enquiry and help system	National Ozone Office	1996 - 1997
6. Legislation	Ministry of Environment /Env. Prot. Department.	1995
7. Project Preparation in co-operation with Implementing Agencies	National Ozone Office	1996-1998
8. Financial and technical transfer assistance procedures	National Ozone Office / Finance	1996 - 1997
9. Monitoring and reporting of ODS usage	National Ozone Office	1996 - 1998
10. User Training	National Ozone Office	1996 - 1998

3. Project Summary Table

Project	Intended Effect	Sector	ODP tonnes affected	Costs in US Dollars
<i>Submitted</i>				
Institutional strengthening	Co-ordination, control, technical support and monitoring	All	264.7	127,050
Training in Refrigerant Management	Training of refrigeration and air conditioning technicians in industrial, commercial and domestic refrigeration sectors	Refrigeration and Air-conditioning	37	261,050 (To be developed further for intersessional approval)
Equipment for recovery and reclamation of ODS in the Refrigeration and Air-conditioning sector	Better management of ODS substances used in the refrigeration and air-conditioning sector.	Refrigeration and Air-conditioning	40	339,300 (To be developed further for intersessional approval)

Project	Intended Effect	Sector	ODP tonnes affected	Costs in US Dollars
<i>Under Preparation</i>				
Customs Officers Training	Training of customs official for strengthening monitoring of importation of ODS	All	264.7	---
Solvent Phase out	Complete phase out of CFC 113 in the degreasing/drying operation at Toly Products Ltd.	Solvents sector	148.1	---
Retro-fitting of Central R11 Air Conditioning Systems	Complete phase out of CFC 11 in the air-conditioning sector	Air-conditioning sector	12.7	---
Technical Support Project to the foams sector to complete phase out	Technical support to cover all foam producing sectors for the implementation of alternative technologies	Foams Sector	Less than 1	---
Methyl Chloroform Phase out Project	To cover for the incremental costs and for technical assistance for implementation of suitable alternative technology.	Solvents Sector	3.5	---
Methyl Bromide Pilot Project	A study for finding the appropriate alternative technologies to suit the local agricultural sector	Agricultural sector	78.4	---

MALTA
COUNTRY
PROGRAMME

Executive Summary

As a Contracting Party to the Vienna Convention and the Montreal Protocol, Malta is committed to phase out the consumption of substances that deplete the ozone layer. Since the *per capita* consumption of ODS in Malta is less than 0.3kg, Malta qualifies for assistance under the Multilateral Fund, which is the financial mechanism provided by the Montreal Protocol. Malta was initially classified as non-Article 5 country but was classified as Article 5 country in 1991.

Malta embarked on an ODS phase-out policy as soon as the international commitment was assumed. In the last few years the consumption of ODS was drastically reduced through the application of *ad hoc* legislation and through the ready collaboration of industry in this endeavour.

For the adoption and the implementation of said policy Malta is seeking assistance by accessing the financial mechanism of the Montreal Protocol through the presentation of this Country Programme.

This Country Programme is a detailed action plan which provides information on the situation concerning the consumption of ODS's in Malta, and delineates the pattern of the strategy that the Government of Malta is proposing for their controlled phase-out in a manner which offers the least cost option to the Multilateral Fund.

The country programme action plan proposes to phase out all ODS consumption by the end of 1998 and aims for an early significant reduction well ahead of Malta's obligations under the Montreal Protocol.

This country programme examines three types of scenarios

A first scenario contemplated unconstrained consumption limited only by market growth. This scenario postulates a total consumption of 2951 metric tonnes of ODS's (excluding transitional substances) up to the year 2010

Another scenario reflects the situation which would be the case if Malta were to follow strictly to the limits imposed by the Montreal Protocol. This assumes that consumption is unconstrained until 1999, followed by the stipulated 50% reduction in 2005 and the further reduction of 15% of the 1996 levels in 2008, with complete phase out by the year 2010. This scenario results in a total consumption of 1330 metric tonnes of ODS's (again excluding transitional substances).

The final scenario depicts the planned accelerated phase out of ODS's (excluding transitional Substances) being proposed by the Government of Malta in this country programme. This scenario entails the total usage of only 261 metric tonnes of ODS's.

In this Country Programme document, the Government of Malta is submitting for approval three projects through which it is seeking financial support from the Multilateral Fund.

In the pursuance of the accelerated ODS phase-out policy, the Government deems it appropriate to provide adequate advice to industry and to manage the pre-determined strategy.

The first project, therefore, that the Government is proposing is for institutional strengthening and the establishment of a National Ozone Office.

The second project concerns a human resources training scheme for the management of refrigeration servicing since in Malta there is a lack of suitable facilities in this field.

The third project which is being submitted is for the procurement of equipment for the recovery of CFCs in refrigeration units.

These two latter projects will be developed further for intersessional submission.

It is the intention of the Government of Malta to present in the near future, other projects for accessing the Multilateral Fund. In fact, areas where funding will be necessary have already been identified, and the respective projects will be formulated when enough information and knowledge has been garnered to calculate the supportive effort intended and the funding required.

The Malta Government will continue to give priority and due consideration to the ODS phase-out policy by creating the necessary administrative mechanisms and by enhancing its supportive stances towards industry's efforts to conform to the agreed policy.

The National Ozone Office within the Environment Protection Department, applying the norms of the *ad hoc* administrative mechanisms established under the ODS phase-out policy, will oversee and monitor the implementation of the phase-out strategy.

The total incremental cost which will achieve the planned ODS phase out is estimated to be US\$6,200,000 to cover the period ending 31st December 1998.

CONTENTS

1.	INTRODUCTION	<u>Pg.</u>
1.1	Purpose	6
1.2	Status	7
1.3	Assistance Received	7
2.	CURRENT SITUATION	
2.1	Current and Forecast Consumption of ODSs	8
2.2.	Industry Structure	15
2.3	Institutional Framework	19
2.4	Policy Framework	23
2.5	The Government and Industry Response to the Protocol	23
3.	IMPLEMENTING PHASE OUT	
3.1	Strategy Statement by the Government	25
3.2	Action Plan	27
3.3	Roles in Implementing the Strategy	31
3.4	Timetable and Consumption Implications	32
3.5	Budget and Financial Programme	33
3.6	Monitoring Arrangements	35
ANNEX A - PROJECT PROPOSAL	INSTITUTIONAL STRENGTHENING	
ANNEX B - PROJECT PROPOSAL	REFRIGERATION SERVICING TRAINING	
ANNEX C - PROJECT PROPOSAL	REFRIGERANT RECYCLING AND RECLAIMING EQUIPMENT	

ACKNOWLEDGEMENT

This Country Programme for the phase out of Ozone Depleting Substances was prepared by the Environment Protection Department, the Government of the Republic of Malta, with financial and resource assistance from the Multilateral Fund, established through the United Nations Environment Programme - Industry and Environment Programme Activity Centre, UNEP IE/PAC.

The Government would like to express its gratitude to the Secretariat of the Multilateral Fund, UNEP and other organisations and individuals who have kindly assisted in the preparation of this Country Programme. In particular it would like to acknowledge the valuable input of the Pollution Control Co-Ordinating Unit of the Environment Protection Department, and the organisational assistance of the Cleaner Technology Centre, a co-operative institution set up between the Environment Protection Department, the Department of Industry, and the University of Malta.

The Government of Malta is confident that this co-operation with UNEP - IE/PAC will continue during the implementation of this plan of action, developed and agreed to in this Country Programme.

1. INTRODUCTION

The Montreal Protocol on Substances that Deplete the Ozone Layer is an international agreement to reduce the consumption of chlorofluorocarbons (CFC's), Halons and other Ozone Depleting Substances (ODS's).

Countries with a calculated per capita consumption of Annex A substances below 0.3kg (Article 5 paragraph 1 countries) are allowed a 10 year extension to phase out the use of ODS's. Malta, with a population of 365,000, and a consumption (at 31st December 1994) of 61.1 ODP tonnes of Annex A substances and 2.0 ODP tonnes of Annex B substances qualifies with a consumption of 0.16 ODP Kg per capita of Annex A substances and 0.06 Kg ODP per capita of Annex B substances respectively.

The Montreal Protocol provides for a financial mechanism (Article 10) to assist Article 5 paragraph 1 countries to comply with the control measures of the Protocol. This is implemented as the Multilateral Fund.

1.1 PURPOSE

Malta signed the Vienna Convention and the Montreal Protocol on the 15th September 1988 and became a party to the Protocol on the 29th December 1988 and was classified as Article 5 country in 1991. In 1990 there was an important amendment, (London Amendment), to the Protocol which Malta ratified in February 1994. Acceptance of a later Amendment (Copenhagen 1992) is being favourably considered.

Malta made a formal request for Country Programme funding by letter transmitted by the Parliamentary Secretary for the Environment on the 19th of October 1993.

As the first stage in obtaining assistance from the Multilateral Fund, the Government of Malta submits this Country Programme to the Fund's Executive Committee. The preparation of this Country Programme reflects the commitment of the Government of Malta to meet its obligations as a Party to the Protocol.

In accordance with Executive Committee's guidelines for Country Programme preparation (UNEP/Ozl.Pr.ExCom/S/16) this document details the pattern of Ozone Depleting Substances consumption in Malta and provides a description of the institutional and policy framework within which the Country Programme will be implemented, a detailed action plan and arrangements for monitoring.

1.2 STATUS

This Country Programme has been prepared by the Environment Protection Department, which has already introduced procedures and achieved a significant reduction of ODS in Malta. A National Ozone Committee consisting of representatives of the Government, Industry, University and NGOs was set up to manage the preparation of the Country Programme.

The management of the data collection and analysis was carried out by a local consultant working to the terms of reference and methodology of UNEP IE/PAC.

The Country Programme is submitted by the Ministry for the Environment on behalf of the Government of Malta.

1.3 ASSISTANCE RECEIVED

Funding assistance for the preparation of this Country Programme was received from the Multilateral Fund through UNEP IE/PAC as the Implementing Agency.

The collaboration and assistance of importers, users and distributors of ODS in Malta, for making possible the data collecting, was much appreciated. The management and the administration of the exercise was carried out by Officials of the Pollution Control Co-ordinating Unit of the Environment Protection Department, the Cleaner Technology Centre and members of the Ozone National Team.

2. CURRENT SITUATION

2.1 Current and Forecast Consumption of ODS's

Companies in Malta generally use a financial year concurrent with the calendar year starting on the 1st of January and ending the 31st of December, and adopt this for record keeping purposes. All references to ODS usage are therefore for a calendar year.

All costs are expressed in US Dollars, calculated at the rate prevailing on 26th May 1995, Lm1 = US\$ 2.89.

2.1.1 Current Consumption

ODS consumption by controlled substance

Malta is a small island with one main port, one airport and Customs procedures are rigorous. The Government has been monitoring the import and export of ODSs since 1989. In addition a formal system of licensing has been in operation since 1990.

This information provides a very accurate picture of ODS consumption in Malta. In addition a detailed survey was carried out between February and April 1995. The survey covered all major importers and users of ODS's in Malta. The majority of this information was derived from personal interviews carried out by trained personnel.

The methodology used in this survey involved a detailed questionnaire which was mailed to all users and shortly afterwards was followed by an onsite visit by a member of the interviewing team who also assisted in the filling in of the questionnaire. Where information was not immediately available, or where the need for additional information was identified, the matter was pursued by further visits and telephone calls.

The match between the data collected during the survey, the Customs figures and calculated consumption figures has been very good and any small discrepancies are not considered significant. The only exception is Methyl Chloroform (MC)which has very widespread usage in the engineering trades mainly by individuals operating non-registered businesses. An allowance for this usage has been calculated and is included in the figures.

Table 2.1(A) shows the consumption of Annex A and B substances, by chemical, for the calendar year 1994.

TABLE 2.1A 1994 CONSUMPTION OF ANNEX A & ANNEX B SUBSTANCES

<u>Substance:</u>	<u>Consumption:</u> <u>(metric tonnes)</u>	<u>ODP factor</u>	<u>Consumption</u> <u>ODP tonnes</u>
<u>Annex A</u> <u>Group I :</u>			
CFC 11	4.8	1.0	4.8
CFC 12	21.2	1.0	21.2
CFC 113	40.0	0.8	32.0
CFC 115	5.2	0.6	3.1
TOTAL	71.2		61.1
<u>Annex A</u> <u>Group II :</u>			
Halon 1211	nil	3	nil
Halon 1301	nil	10	nil
<u>Annex B</u> <u>Group II :</u>			
Carbon Tetrachloride	negligible	1.1	negligible
<u>Annex B</u> <u>Group III :</u>			
Methyl Chloroform	19.6	0.1	2.0

In addition, data was collected on Annex C and E substances, and this is presented in table 2.1 (B) for information only.

TABLE 2.1B 1994 CONSUMPTION OF ANNEX C & ANNEX E SUBSTANCES

<u>Substance:</u>	<u>Consumption:</u> <u>(metric tonnes)</u>	<u>ODP factor</u>	<u>Consumption</u> <u>ODP tonnes</u>
<u>Annex C</u> <u>Group 1 :</u> HCFC 22	 57.4	 0.055	 3.2
<u>Annex E</u> <u>Group 1 :</u> Methyl Bromide	 112	 0.7	 78.4

ODS Consumption by end use application

Data collected during the survey of users has been reformatted to show the use of Annex A and B substances by sector, and this is summarised in Table 2.2. It should be noted that the major use of ODS's in Malta takes place in one particular industry where it is used as a degreasing solvent.

Where appropriate data pertaining to this organisation is shown separately to facilitate understanding of trends.

TABLE 2.2. CONSUMPTION FOR CALENDAR YEAR 1994 BY SECTOR & SUBSTANCE

Sector	Substance	Consumption (metric tonnes)	ODP	Consumption (ODP tonnes)
Cleaning & Degreasing	CFC113 M.Chloroform	40.0	0.8	32.0
		19.7	0.1	2.0
Refrigeration New Construction	CFC12	5.0	1.0	5.0
Refrigeration Servicing	CFC12	16.2	1.0	16.2
	CFC115	5.2	0.6	3.1
Air-Conditioning New Construction		nil	nil	nil
Air Conditioning Servicing	CFC11	4.8	1.0	4.8
Foams		♦ nil	nil	♦ nil
Fire-fighting		♦ nil	nil	♦ nil
Aerosols		nil	nil	nil

♦
see page 22 Fire Fighting and Foams

2.1.2 Forecast Consumption

Unconstrained Demand

In order to determine the demand for controlled substances and hence the incremental cost to the country the following assumptions were made.

- No attempt is made by industry and consumers to comply with the Protocol;
and
- Unconstrained quantities of controlled substances continue to be available from existing sources, at current prices.

The overall demand forecast for controlled substances is largely determined by a range of macro economic indicators, including

- Gross Domestic Product Growth
- Population growth rate
- New investment in ODS user sectors (sector growth)

The baseline macro-economic data is summarised below. This is obtained from material published by the Ministry of Finance in its Economic Survey for 1994, and the Central Bank Annual Report for the same year.

Data for year ended December 1994 :

Population: 365,000

Population Growth Rate: 0.7 % p.a.

GDP Growth Rate: 5.1 % p.a.

GDP: US\$ 1,360 million

One of the principal sectorial contributions to GDP is the manufacturing industry (including shipbuilding and ship repair) accounting for 23.9% in 1994. The importance of the manufacturing sector is illustrated by the net investment outlays undertaken since 1988, amounting to US\$ 445 million. The total value added in the period surveyed amounted to US\$ 614 million, or an average figure of US\$19,654 per employee and a registered growth in the manufacturing sector of 7.3%.

Household disposable income from January to September 1994 amounted to US\$ 4569 million up by 9.5% from the same period of 1993. With a population of 365,000 at the end of the year, and private consumption expenditure of US\$ 1,262 million in the first three quarters of the year, demand for consumer durables, including appliances and white goods, remains very strong. Wholesale and retail trade accounted for 13.4% of GDP in 1994.

Malta, being a small open economy, is heavily dependant upon trade, particularly trade with the EU, which absorbs US\$ 923 million of exports {of which US\$ 455 million are directed towards Italy and US\$ 179 million are absorbed by Germany}. Indeed the external sector is the main driving force behind the growth of the local economy, with sustained exports of manufactured goods of US\$ 1,224 million and a steady performance of the tourist sector, yielding earnings of US\$ 598 million in 1994 (January - September data).

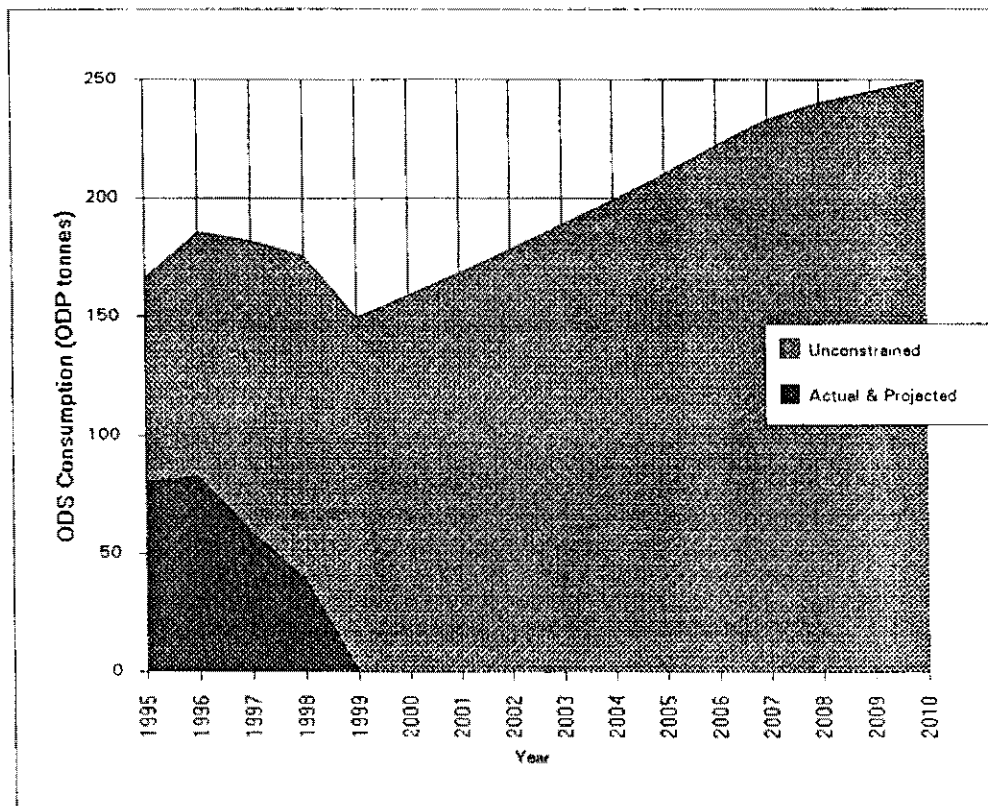
The tourism industry remains an important sector of the economy, further strengthened by an extended network of the national airline's flight destinations, a diversification of source markets, and an improved seasonal spread of tourist arrivals. At peak times the population of Malta more than doubles, which explains the high activity in refrigeration and air conditioning sectors. The construction sector is also buoyant as a result of large scale tourist projects currently under development.

The outlook for Malta in the coming year is positive, though dependant on the resumption of brisk economic activity in the country's trading partners. Real Gross Domestic Product growth in the EU is expected to reach 3%, as member states emerge out of recession, thereby sustaining the demand for Maltese exports. However, local export oriented producers may face high capacity utilisation and external competitiveness constraints.

The main sources of ODS's supplied to Malta are from the European Union countries, which are all parties to the Montreal Protocol. The effects of the global phase out have already been significant in Malta, manifest as higher prices and decreasing availability of ODS's.

The projections for ODS consumption are based on the main sectorial indicators and extrapolation from historic consumption, with an allowance made for partial phase out, where this has already been accomplished (due to licensing restrictions/import controls and market forces).

The unconstrained demand forecast is shown in comparison to the actual and projected consumption of ODS in Chart below.



2.2. Industry Structure

The main categories of ODS users in Malta are:

- a) Commercial Refrigeration (Supply / Servicing) app. 10 main companies
- b) Non Commercial Refrigeration (Supply / Servicing)
- c) Air Conditioning (Supply / Servicing)
- (b) and (c) approximately 80 main enterprises,
mostly of small size
- d) Cleaning and Degreasing mainly 2 companies
- e) Fire Fighting mainly 3 companies
- f) Foam mainly 3 companies
- g) Metal Cleaning widespread
- h) Agriculture mainly 4 companies
- i) Other sundry users

There are no enterprises producing or manufacturing ODS's in Malta.

All ODS's importation is done through six main importers and also by some large users who import it directly from manufacturers, usually of EU origin.

Commercial Refrigerators - Supply and Service

There are about 10 main companies in Malta that supply and service commercial refrigerators and freezers. This includes installation and servicing of large refrigeration plants air conditioners employing chilled water circuits and room fan-coil units. An empirical calculation of consumption is in accord with reported consumption. Some companies have limited stockpiles of CFC 12.

Several of the bigger hotels, factories and the Government Departments have their own in-house refrigeration and air-conditioning technicians. Many of the technicians employed here are also active on an individual (private) part-time basis in the field of domestic (non commercial) refrigeration and air-conditioning.

Non Commercial Refrigeration - Supply and Servicing

This sector comprises most of the importers of domestic white goods. It is estimated that there about 10 major importers. Since white goods are in nearly all cases imported from the EU, new imports will be with refrigerants complying with the Montreal Protocol.

There is however considerable quantities of old units which will require servicing in the future.

Since the Government has a policy whereby there is freedom to import from all countries, it cannot be excluded that some limited amounts of domestic equipment using say R12 would have been imported. The Government through the newly set up department of consumer affairs will be taking steps to publicise and educate consumers as to the eventual future difficulties in the servicing of such equipment.

About 80 companies (many small) are active in this servicing market and tend to operate in both the air-conditioning and refrigeration sectors. They carry out servicing of domestic refrigerators and freezers and in a few cases automotive air conditioners.

There is a growing market in the fields of domestic air conditioning, with split units enjoying considerable popularity. These are mainly R22 units.

Another growth area is in domestic de-humidifiers. Industry estimates suggest the presence of a around 20,000 units in the range capable of removing between 4 and 12 litres of water per day. Most of these have been installed during the past 7 years. Again these make use primarily of HCFC 22.

Total consumption of ODS's by all servicing industry was 21.4 metric tonnes in 1994. Measures have already been taken by users in this sector to reduce their ODS consumption, notably the installation of CFC-free refrigeration plants and CFC-free air conditioners.

Some retrofitting of motor vehicle air conditioners to R134A is also occurring. There will however be a future demand for CFC 12 to service existing motor vehicle air conditioners, some domestic air conditioners, domestic refrigerators and freezers and large refrigeration plants.

This demand for CFC's will gradually decline as new CFC-free units replace old CFC using units on the eventual termination of the operational life of the latter.

It is estimated that around 260 technicians work in this sector. In general these do not have formal qualifications, although all have some 'on the job' training and are on the whole considered to be proficient in their work. In common with the rest of the Maltese labour force, these people are very amenable to retraining in the use of the new refrigerants, as well in measures to conserve and recycle existing stocks of ODS refrigerants.

In estimating the usage of ODS's in this sector, calculations were made to cross check consumption data.

In the case of refrigeration equipment, it is assumed that there are around 125,000 households in Malta. With the high standard of living enjoyed, all would be expected to have at least one refrigerator and many would also have a deep freezer.

Industry sources suggest that there are around 600 cold chambers, 500 central air conditioning units and around 5% of domestic households, and 10% commercial premises have installed room air conditioners.

Cleaning and Degreasing

Two main companies have used ODS for cleaning, SGS Thomson, an electronics manufacturers (of Italian/French ownership) and Toly Products, a local company.

SGS Thomson phased out the use of CFC 113 for cleaning printed circuit boards in 1992 and has almost completed the phase out of CFC 12 in small refrigeration units. The company has a global environmental policy and is also actively phasing out R22 use. There is now no significant consumption of ODSs by this firm.

Toly Products, a manufacturer of cosmetic cases started operations in 1971 and is one of the oldest established companies in the country. From a work force of 40 employees it now has over 400 individuals on its payroll. The introduction of a state of the art UV lacquering plant, which uses CFC 113 in the degreasing/drying operation, coupled with an exceedingly high product quality has secured a very significant market for the firm. Toly has grown at an annual rate of approximately 200% since 1990.

The company is now well advanced in the preparation of a phase out project under the auspices of UNIDO. In 1993 the Company imported 25 tonnes, in 1994 40 tonnes and during 1995 may well import over 65 tonnes of CFC 113. Activities to phase out use are therefore very significant

Fire Fighting

The firms in this sector are small and usage in this sector has been insignificant in the past and stockpiling is at best less than a tonne. For this reason historical data is not shown separately. If the Government of Malta decides, at a future date, to submit any projects for this sector (which will be small scale) it will submit specific historical usage data at the enterprise level.

There are at least 30 fixed fire fighting systems in Malta containing Halon 1301. There are also a large number of portable fire extinguishers which contain Halon 1211.

These are all serviced by a few companies, amongst which are Fire Tech Ltd, Alberta Trading and Pace Fire Prevention.

No new Halon systems have been installed in Malta since 1993. Portable extinguishers are being replaced with powder, fixed systems are no longer being serviced with new Halon and it is anticipated that these will gradually be replaced with alternative technology systems. Expelled Halons are recovered and re-utilised by all of the three operators.

The national airline, Air Malta, has aircraft fire extinguishers which are serviced partly in Malta and partly in other countries. For the latter case, therefore, the Halon requirements form part of the declared consumption of the country involved.

Overall, Halon consumption is now negligible, and future requirements are both very small, and being met by existing stocks, better housekeeping and equipment replacement.

Foam

The firms in this sector are small and usage in this sector has been insignificant in the past and stockpiling is at best less than a tonne. For this reason historical data is not shown separately. If the Government of Malta decides, at a future date, to submit any projects for this sector (which will be small scale) it will submit specific historical usage data at the enterprise level.

There are three companies who manufacture polyurethane foam. Two are active in the furnishing/upholstery / bedding fields; whilst the other manufactures thermal insulating panels for modular cold rooms. No importation of ODS's was carried out in 1994, and no importation will be permitted henceforth, their needs being met from existing stock. These companies are actively investigating alternative technologies.

Metal Cleaning

Metal Cleaning techniques form essential steps in the processing of metals in several small enterprises in Malta. Approximately 20 tons of ODSs were utilised in this sector in 1994.

It is not anticipated that phase out of ODS's will be of any great technical difficulty since substitutes are readily available and are being introduced.

Agriculture

In 1994 112 tonnes of methyl bromide were used in the horticultural and market gardening sectors. Malta has effected a voluntary cut on this amount and it is estimated that in 1995 consumption will not exceed 40 tonnes. In this respect Malta will be following international practice as closely as possible in the future in line with its policy of co-operating with the international community in protecting the environment.

Other sundry users

For the purposes of ODS's consumption purposes, Malta makes negligible use of ODS in the areas of solvents, coatings, adhesives, and aerosols (which were phased out in 1990 following legislation banning their use). Additionally no ODS's were used in the food processing and dry - cleaning industries in Malta.

2.3 Institutional Framework

This section details the specific responsibilities of the public and private sector organisations that will contribute to successful implementation of ODS phase out in Malta. The principal body responsible for managing and co-ordinating compliance with the Montreal Protocol is the Environment Protection Department which forms part of the Ministry for Environment.

The National Team

The National Team is a task force comprising representatives from the Government, Industry, University, and NGO's which meets regularly and considers ozone related matters and specifically reviewed this Country Programme. The National Team then makes recommendations on the phase out policies and actions.

National Ozone Office

It is envisaged that the proposed Institutional Strengthening Project attached to this Programme will provide for the setting up of a National Ozone Office.

This Office will be responsible for collecting and disseminating data on ozone depletion and for educating people on ozone depletion through public awareness campaigns and sector specific actions and co-ordination.

The Malta National Ozone Office will:

- Set up and manage a comprehensive information system on all ODS importers and users.
- Put into practice a registration system for all ODS users
- Maintain regular and up-to-date records of all import of ODS.
- Keep ODS users and all other interested parties updated of the situation concerning consumption and scheduled phase out targets
- Establish useful contact with other National Ozone Offices and implementing agencies for the exchange and the channelling of information
- Formulate and support the detailed phase out actions identified in the Country Programme.

- Provide and facilitate co-ordination for the proper conduct of the phase out actions.
- Monitor, assess and guide the progress of the programmed implementation of the ODS phase out.
- Monitor the transfer and utilisation of Financial and Technical assistance provided by the relative Implementing Agencies.
- Act as the liaison between the Government and the international bodies involved in the Ozone-Action Partnership (i.e. UNEP, UNIDO, World Bank, The Fund Secretariat, etc.)
- Point out the need for any necessary legislation in support of the Country Programme, and assist in its formulation.
- Instigate, conduct and support public awareness campaigns on all the nuances of the ozone issue.
- Report ODS consumption to the UNEP Ozone Secretariat as per the requirements of the Montreal Protocol on a yearly basis.
- Report on progress of the country programme implementation to the Multilateral Fund Secretariat, on a yearly basis as per agreed format.

Central Statistical Office

This office is responsible for maintaining national statistics, some of which may then be used by the Ozone Office. National statistics which will be relevant to the Ozone Office include total population, number of households, number and classes of motor vehicles.

Comptroller of Customs

This Department is responsible to the Ministry of Finance. Since imports of articles to Malta came under the control of the Comptroller of Customs this office will have a close liaison with the Ozone Office for the proper management of the Ozone Strategy.

Ministry of Education

The Ministry of Education will provide support to the National Ozone Office by distributing material prepared by the Ozone Office and allowing school visits and talks by the Ozone Officer.

Employment Training Corporation

The Employment Training Corporation is entrusted with the training / re-training of persons who are seeking employment / re-employment. The Employment Training Corporation offers a wide range of courses which includes a brief induction course on basic refrigeration skills.

Malta Chamber of Commerce

The Chamber of Commerce, which has a representative on the National Team, will assist the proposed National Ozone Office in providing details of all members who may use ODS's either directly or indirectly. The Chamber will use its good offices to heighten members' awareness of ODS and Montreal Protocol issues and promote ODS consumption minimisation and maximisation of ODS recovery.

Non Governmental Organisations

There are NGO's with interest in related environmental issues and it is expected that, with the diffusion of awareness, these will continue to grow in number and size. They may be asked to play roles in public awareness campaigns when appropriate. The Ozone Office will provide assistance to facilitate participation by NGO's.

2.4 Policy Framework

2.4.1 Regulatory Policy

The policy of the Government of Malta is to provide an as free as possible access to goods and services to everybody, including the commercial community

Where market orientation fails and industry sectors or specific organisations are not inclined to voluntarily submit to the requirements of this Country Programme then a number of specific legislative powers can be enacted. The Government has full executive powers; and legislation as required can be used to enforce desired policies.

Such measures may include, but are not necessarily limited to:

- Outright ban on the importation of certain substances
- Quantitative restrictions on the importation of certain substances
- Specific import levies on the importation of certain substances

2.5 The Government and Industry Response to the Protocol

Malta signed the Vienna Convention and the Montreal Protocol on the 15th September 1988 and became a party to the Protocol on the 29th December 1988. Malta has also approved the London (1990) Amendment and ratified it on the 4th of February 1994. Acceptance of later Amendments (Copenhagen 1992) is being favourably considered.

There are already laws enacted which effectively control the importation and use of ODS's. Primarily there is Importation Control Act of 1966 which permits the Government to place importation of any item including ODS's under regulatory control, and more specifically the Aerosol Spray Order LN70 of 1990 which was instrumental in drastically reducing the consumption of ODS's in that year.

Representatives of the Government have discussed ODS effects and the Montreal Protocol with most of the major consumers of ODS's in Malta since it became a party to the Protocol. A seminar on 'What future CFC's' was organised by the Cleaner Technology Centre on 15th July 1994. Another one was held on the 3rd January 1995, during which the National Ozone Committee was formally established. A workshop for the representatives of the industrial sector was held in Malta on the 25th May 1995 on the practical implementation of the Montreal Protocol.

Industry has already made significant progress in the phase out of ODS's.

The public is in general well informed of the environmental consequences of ODS use, and appreciate the need for their rapid phase out. Coverage in the media is sufficient to ensure continued awareness.

Malta is eligible for assistance from the Multilateral Fund as it qualifies for developing country status under Article 5. Consumption is of 0.16 ODP Kg per capita considering a population of 365,000, and a consumption (as at 31st December 1994) of 61.1 ODS tonnes of Annex A substances.

The Government initiated the development of the Country Programme and assigned the management of all activities related to the Montreal Protocol to the Environment Protection Department, which falls under the Ministry for Environment.

The Environment Protection Department together with the National Ozone Committee has co-ordinated the development of this Country Programme and has discussed issues with all major ODS consumers in Malta and gained their concurrence for its action plan.

The establishment of a National Ozone Office, as an institutional strengthening unit, is an integral part of this Country Programme. It will serve as a primary focal point for all activities during implementation and monitoring.

All relevant Government ministries and departments have been made aware of Montreal Protocol issues. A fuller public awareness campaign will be conducted by the National Ozone Office as a further part of its action plan.

The Government has dedicated significant resources to the implementation of this country programme which is therefore a manifestation of the commitment of the Government of Malta to achieve an expeditious phase out.

3. IMPLEMENTING THE PHASE-OUT

3.1 Strategy Statement by the Government

The Government of Malta is committed to pursuing an ODS phase-out strategy consistent with its developmental aspirations. Such phase-out will entail the minimum economic cost possible for all the affected sectors. The effective reduction of the controlled substances will ensue through positive encouragement of the adoption of alternative technologies.

Much of Malta's trade is with countries in the EU and strategies must therefore be consistent with trading partners.

A campaign on public awareness will be a key facet of the strategy, since the Government is convinced that better diffusion of information makes for general acceptability of its policies.

In these last years the Government had already introduced significant administrative measures for the reduction of ODS. The application of these measures was possible either by reference to existing legislation or through the enactment of new *ad hoc* laws.

These measures include:

- quota licences for the import of ODSs.
- enactment of a ban in the aerosol sector.

It is the intention of the Government, from within its own resources, to continue to conduct the National Ozone Policy by :

- Up-grading the potential of the Environment Protection Department to be able to satisfy the added responsibilities.
- Introduce rationality and discipline in local practices by establishing a registration and certification system for all the ODS users.
- Encourage voluntary agreements with ODS users, both at the sectorial and the individual level.
- Mount publicity programmes for a more diffused and a better informed public awareness, which render policies more readily acceptable.
- Continue with, and refine the import monitoring procedures, giving the Customs Authorities a definitively articulate mandate in applying the policy of the Government on ODS.

Where and when appropriate apply bans or forced reductions of ODS.

Promote the use of substitute chemicals and the introduction of technologies *in lieu* of consumption of ODS.

Favour the implementation of projects having the built-in potential of reducing ODS

Malta intends to phase out all uses of ODS by the end of 1998, and aims for an early, significant reduction well ahead of the obligations, previously negotiated, as set under the Montreal Protocol. Table 3.1 shows the phase-out profile for Malta.

TABLE 3.1 FORECAST CONSUMPTION OF CONTROLLED SUBSTANCES, BY CHEMICAL (ODP TONNES) UNDER THE PHASE OUT PROFILE FOR MALTA

	1995	1996	1997	1998	1999 and onwards
<i>Annex A Group I</i>					
CFC 11	4.3	3.5	2.8	2.1	nil
CFC 12	25.0	25.0	22.0	20.0	nil
CFC 113	48.1	52.0	32.0	16.0	nil
CFC 115	3.0	2.4	1.8	1.2	nil
<i>Annex A Group II</i>					
Halons	nil	nil	nil	nil	nil
<i>Annex B Group III</i>					
Meth.Chloroform.	1.5	1.0	0.5	0.5	nil

3.2 Action Plan

3.2.1 Action by the Government

The Government of Malta is committed to the implementation of the detailed actions shown below to achieve its phase out target before 1999.

Action	Responsibility	Timing
1. Establish Ozone National Team	Env. Prot. Department.	Done
2. Establish National Ozone Office	Env. Prot. Department.	1995
3. Develop & implement public awareness campaign	National Ozone Office	1996 - 1998
4. Strengthen existing ODS import licence system	Customs / Env. Prot./Trade	1996
5. Develop user enquiry and help system	National Ozone Office	1996 - 1997
6. Legislation	Ministry of Environment / Env. Prot. Department.	1995
7. Project Preparation in co-operation with Implementing Agencies	National Ozone Office	1996-1998
8. Financial and technical transfer assistance procedures	National Ozone Office / Finance	1996 - 1997
9. Monitoring and reporting of ODS usage	National Ozone Office	1996 - 1998
10. User Training	National Ozone Office	1996 - 1998

To expand upon the specific measures to be taken by the Government Agencies :-

The network of representatives from the Government, ODS users and distributors and other organisations will oversee all the required actions.

The establishment of a National Ozone Office, with the mandate for implementing the policies deriving from the country's commitments under the Montreal Protocol, will provide the administrative and technical support

Public awareness campaigns to disseminate knowledge on the issues related to the Montreal Protocol will be a key tool.

Carry out a detailed re-appraisal of the administrative tools for effecting the ODS reduction strategy, based on strengthening the already accurate registration and certification regime. Licences and permissions will be in full accord with the proposed strategy.

Set up an information system and maintain accurate records on a regular basis of all ODS imports. The system will include correct details of all importers and users.

Formulate and put into effect any legislation that the conduct of the country programme may reveal as being necessary.

3.2.2 Projects

With this Country Programme we are submitting three projects for approval and funding by the Executive Committee, namely one for institutional strengthening, one for training in refrigeration management and one for the procurement of equipment for recovery and reclamation of ODS in the refrigeration and air-conditioning sector.

The project for Institutional Strengthening is needed to put into being a formal convergence point for the rational and articulate management of the ODS phase-out.

The setting up of a National Ozone Office within the administrative framework of the Environment Protection Department is the main aim of this project.

The National Ozone Office will provide a substantive mechanism for addressing ODS issues, act as a co-ordinating agency in implementing the phase-out policy and provide the necessary liaison between the several parties affected by or interested in the ODS phase-out strategy.

The project for training in refrigeration management is needed because there is a lack of knowledge on refrigerant management principles and good practices for refrigeration servicing training in Malta.

Training the trainers is the principal aim of the project. It is envisaged that training courses overseas would gain for participants insights in the techniques and management methods experienced by countries that have already implemented ODS phase-out programmes.

The project for the procurement of equipment for the recovery and reclamation of ODS in the refrigeration and air-conditioning sector is necessary because there are currently no facilities and/or equipment available in Malta for the recovery and reclamation of refrigerants.

The equipment will have two primary uses: training, and actual employment by industry for ensuring the correct implementation of the ODS phase-out.

TABLE OF PROJECTS SUBMITTED

Project	Intended Effect	Sector	ODP tonnes affected	Costs in US Dollars
Institutional strengthening	Co-ordination, control, technical support and monitoring	All	264.7 note 1	161,700
Training in Refrigerant Management	Training of refrigeration and air conditioning technicians in industrial, commercial and domestic refrigeration sectors	Refrigeration and Air-conditioning	37 note 2	261,050
Equipment for recovery and reclamation of ODS in the Refrigeration and Air-conditioning sector	Better management of ODS used in the refrigeration and air-conditioning sector.	Refrigeration and Air-conditioning	40 note 2	339,300

Note 1

Institutional strengthening cover all sectors.

Note 2

Projects cover parts of CFC 11 & CFC 12 & CFC 115 consumption

TABLE OF PROJECTS UNDER PREPARATION

Project	Intended Effect	Sector	ODP tonnes affected	Costs in US Dollars
Customs Officers Training	Training of customs official for strengthening monitoring of importation of ODS	All	264.7	---
Solvent Phase out	Complete phase out of CFC 113 in the degreasing/drying operation at Toly Products Ltd.	Solvents sector	148.1	---
Retro-fitting of Central R11 Air Conditioning Systems	Complete phase out of CFC 11 in the air-conditioning sector	Air-conditioning sector	12.7	---
Technical Support Project to the foams sector to complete phase out	Technical support to cover all foam producing sectors for the implementation of alternative technologies	Foams Sector	Less than 1	---
Methyl Chloroform Phase out Project	To cover for the incremental costs and for technical assistance for implementation of suitable alternative technology.	Solvents Sector	3.5	---
Methyl Bromide Pilot Project	A study for finding the appropriate alternative technologies to suit the local agricultural sector	Agricultural sector	78.4	---

The Government has already identified areas where projects will be needed and for which funding will be sought for from the Multilateral Fund.

The total incremental cost of all the identified projects is US\$ 762,050.

3.3 Roles In Implementing The Strategy

The lead agency in this Programme will be the Environment Protection Department, a Department within the Ministry for Environment. The National Ozone Office will be established within the administrative framework of this Department.

The following other organisations and the Government departments have been identified as playing an important role in the implementation of this Country Programme:

The Government and other Organisations

- Ministry of Finance
- Ministry of Agriculture
- Comptroller of Customs
- Ministry of Education
- Ministry of Economic Planning and Development
- Central Office of Statistics
- Federation of Industry
- Malta Chamber of Commerce
- Other professional bodies which may be requested to provide the necessary technical support.

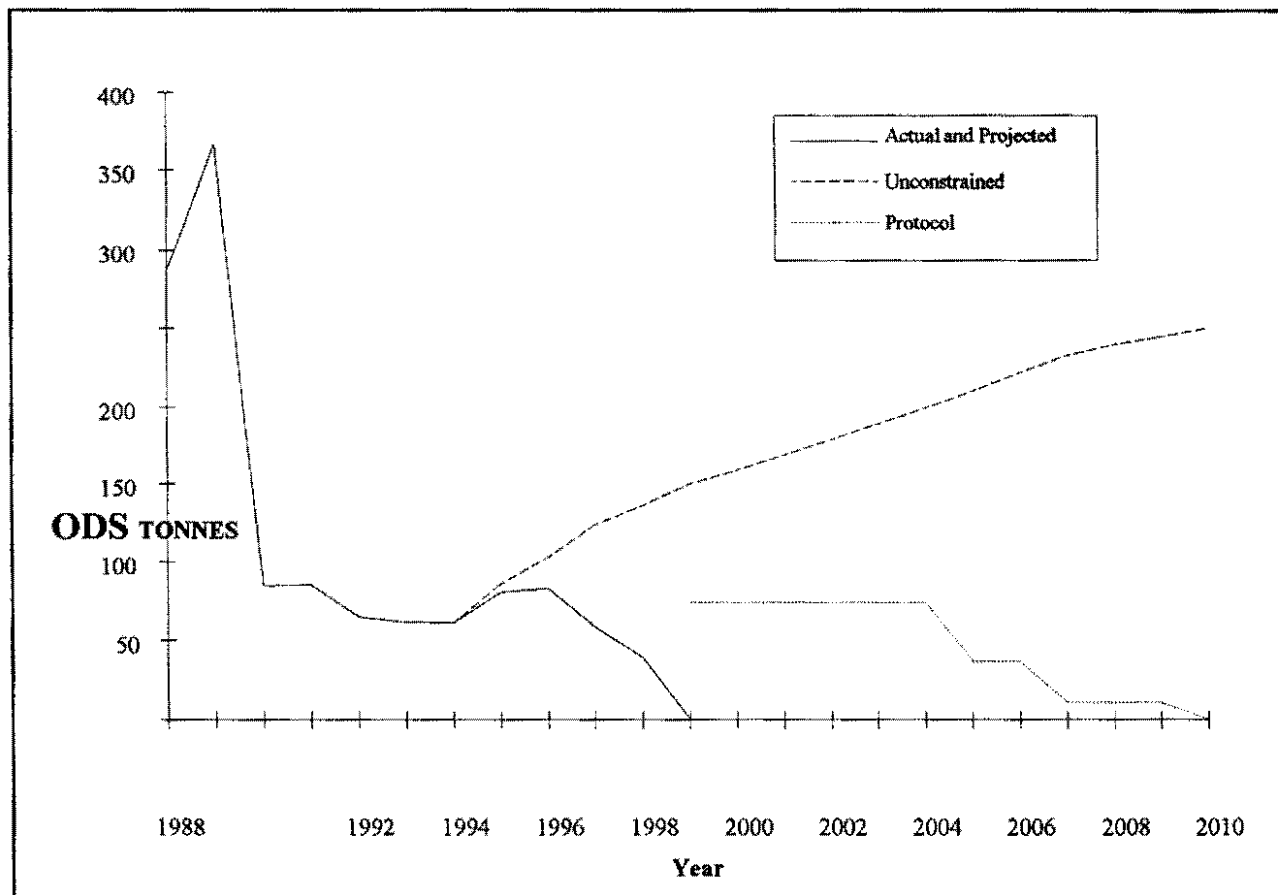
Implementing Agencies

- UNEP (support on capacity building and institutional strengthening and training project implementation)
- UNIDO (support on formulation and implementation of investment projects)
- UNDP (support on general technical advice, co-ordination with other technical or environmental projects being undertaken in the country and communication resources)

3.4 Timetable And Consumption Implications

Malta has already drastically reduced the consumption of ODSs and intends to continue on this endeavour, however the forecast demand for Annex A and Annex B substances is illustrated in the graph below:

CHART 3.4 : ODS PHASE OUT CHART FOR MALTA



It is clear that even without the accelerated phase-out there would be a forced reduction in the normal activity induced by market forces, as global supply is already constrained. The price of most CFC's has increased dramatically, and imports from international ODS manufacturers has forced all consumers to consider and adopt actions to reduce with a view of totally eliminating their consumption. Heightened awareness of environmental issues by manufacturers and end product users has also speeded up the moves away from ODS consumption.

The total incremental costs for the complete phase-out of consumption of ODS for a time lapse ending 31st December 1998 is US\$ 6,200,000.

3.5 Budget and Financing Programme

The Government of Malta has made a considerable effort in the past years, in satisfying the commitment assumed under the Montreal Protocol, dedicating to the endeavour both human, financial and material resources.

No fiscal advantages have accrued or will accrue to the Government through the implementation of the ODS phase out. In fact, the outlay by the Government in money terms will be well in excess of the amount being requested from the Multilateral Fund for the institutional strengthening project.

The Government of Malta identifies three projects set out in Annexes A, B and C of this Country Programme submission. These projects are being forwarded to the Multilateral Fund for approval and funding through UNEP as the implementing agency.

The total incremental costs are estimated US\$ 6,200,000 to 31st December 1998 and include the institutional strengthening project, the training in refrigerant management project and another project for equipment for the recovery and reclamation of ODSs in the refrigeration and air-conditioning sector. Other projects have been identified and are still under preparation. Such projects include Customs Officers Training Programme, a solvent phase-out project, a collective project for the retro-fitting of central R11 air-conditioning systems, a technical support project to the foams sector to complete the phase-out, a methyl chloroform phase-out project and a methyl bromide pilot project.

(All calculations of incremental costs are based on an exchange rate of LM 1=US\$ 2.89).

Project Name	Sector	Purpose	Starting Year	Implementing Agency	Funds Requested in US Dollars
Institutional strengthening	All	To provide co-ordination, control, technical support and monitoring	1996	UNEP	161,700
Training in Refrigerant Management	Refrigeration and Air-Conditioning	To provide training of refrigeration and air conditioning technicians in industrial, commercial and domestic refrigeration sectors	1996	UNEP	261,050
Equipment for recovery and reclamation of ODS in the Refrigeration and Air-conditioning sector	Refrigeration and Air-conditioning	Better management of ODS substances used in the refrigeration and air-conditioning sector.	1996	UNEP	339,300

3.6 Monitoring Arrangements

Consumption

Overall scheduled monitoring of ODS consumption will be achieved primarily through the National Ozone Office which will secure the co-operation of users and suppliers.

The application of a strict imports licence regime will continue to be also used as a monitoring tool.

Licensing, certification and registration will be backed by *ad hoc* legislation if the need for this becomes necessary.

Improved inspection procedures will be adopted.

A pro-active liaison with industry will ensure the correct and effective implementation of the ODS phase-out.

Projects

The monitoring of all projects will be the primary responsibility of the Government of Malta through the Environment Protection Department, the Ozone Committee and the National Ozone Office to be established.

The Government of Malta will continue to be fully accountable for reporting all manner of progress to the Fund Secretariat.

PROJECT COVER SHEET

Country:	MALTA
Project Title:	Institutional strengthening for the phase out of ozone depleting and the establishment of a National Ozone Office
Implementing Agency:	UNEP
National Implementing Agency:	ENVIRONMENT PROTECTION DEPARTMENT
Consumption of controlled substances:	264.7 ODP weighted metric tonnes
Project duration:	3 YEARS
Project Objective:	ODS phase out as per Country Programme
Justification:	Dedicated unit required to monitor, provide advice on and compliance with country Programme's ODS phase out schedule.
Sectors covered:	All Sectors
Total Incremental Costs:	US\$ 161,700

1. Project Description

The Government of Malta ascribes significant importance to the country's adherence to the Vienna Convention and the Montreal Protocol and is committed to pursue a National Ozone Policy implemented through the actions shown in detail in the Country Program.

In pursuance of this policy the Government requires to provide advice to the industry sectors and other users effected by the phase out, develop monitoring capabilities for the correct conduct of the Country Programme, identify projects and co-ordinate and supervise their implementation and provide a substantive framework for addressing ODS issues.

To fulfil the functions outlined above a project is proposed for the establishment of a National Ozone Office.

2. Structure and Management

The National Ozone Office is to be set up within the regulatory and administrative framework of the Environment Protection Department, within the Ministry of Environment. The work of the National Ozone Office will be guided by the National Team and he or she will functionally report to the Ministry of Environment via an agreed job description.

The National Ozone Office will be run by one officer, supported by part-time administrative assistant and the ad-hoc assistance of a technical local consultant.

3. Activities

The Work of the National Ozone Officer will comprise:

- Set up and manage a comprehensive information system on all ODS importers and users.
- Put into practice a registration system for all ODS users
- Maintain regular and up-to-date records of all import of ODS.
- Keep ODS users and all other interested parties updated of the situation concerning consumption and scheduled phase out targets
- Establish useful contact with other National Ozone Offices and implementing agencies for the exchange and the channelling of information
- Formulate and support the detailed phase out actions identified in the Country Programme.
- Provide and facilitate co-ordination For the proper conduct of the phase out actions.
- Monitor, assess and guide the progress of the programmed implementation of the ODS phase out.
- Act as the liaison between the Government and the international bodies involved in the Ozone-Action Partnership (i.e. UNEP, UNIDO, World Bank, The Fund Secretariat, etc.)
- Point out the need for any necessary legislation in support of the Country Programme, and assist in its formulation.
- Instigate, conduct and support public awareness campaigns on all the nuances of the ozone issue.
- Report ODS consumption to the UNEP Ozone Secretariat as per the requirements of the Montreal Protocol on a yearly basis.
- Report on progress of the country programme implementation to the Multilateral Fund Secretariat, on a yearly basis as per agreed format.

4. Inputs

On consideration of the size of the economy, the number of ODS users, the demographic base, the consumption *per capita* and the already "under-way" situation concerning the control of ODS, it is proposed that one Ozone officer will be hired.

Office space and operational facilities for an inspectorate function including transportation facilities are to be provided by The Government. The amounts claimed under Photocopies, EMail / Modem and Telephone / Fax refer to consumables and service charges only. Government will be responsible for the capital and other expenditure in connection with their provision.

To this effect, the financial input by the Government of Malta is by far in excess of the assistance being requested.

There is to be a provision for subcontracting recognised experts when specialised specific technical input is appropriately required, and this can only be obtained from external expertise not available from implementing agencies.

5. Budget

The total budget for the whole three-year project is of US\$ 161,700

Staff incentives are provided for thus:

Ozone Officer : US\$26,000 *per annum*;

The staff incentive is at the current rate for a Grade 4 Civil Service employee.

Administrative Assistance: US\$ 4,500 *per annum*.

Staff incentive for external technical inputs is based on ten days *per annum* at US\$400 per day.

These staff incentives are based on current financial remunerative scales and job descriptions in force in the Malta Government Service. In view of the rapid increase in the standard of living, it is anticipated that salaries will be augmented markedly in the immediate years and will approximate to salaries in the EU in line with Government's policy to become a partner in the union.

INSTITUTIONAL STRENGTHENING PROJECT FOR MALTA: DETAILED BUDGET

(Figures in US Dollars)

Recurrent expenses	1996 Total	1997 Total	1998 Total	TOTAL
Staff incentives	26,000	26,000	26,000	78,000
Official travel	3,000	3,000	3,000	9,000
Photocopies	1,000	1,000	1,000	3,000
E-Mail, Modem	1,000	1,000	1,000	3,000
Telephone, Fax	1,000	1,000	1,000	3,000
Stationery, etc.	500	500	500	1,500
Public awareness campaigns	6,000	6,000	6,000	8,000
<i>Sub-total (US\$)</i>	38,500	38,500	38,500	115,500
Contingencies (10%)	3,850	3,850	3,850	11,550
Total US\$	42,350	42,350	42,350	127,050

PROJECT COVER SHEET

Country:	MALTA
Project Title:	TRAINING IN REFRIGERANT MANAGEMENT
Implementing Agency:	UNEP
National Implementing Agency:	ENVIRONMENT PROTECTION DEPARTMENT
Consumption of controlled substances:	111.1 ODP weighted metric tonnes
Project duration:	3 YEARS
Project Objective:	Improved Management of refrigerants to achieve ODS phase-out
Justification:	There is the need for a long term project to train refrigeration and air-conditioning service technicians in the industrial, commercial and domestic refrigeration sectors in order to reduce consumption of ODS through better working practices.
Sectors covered:	REFRIGERATION AND AIR CONDITIONING
Total Incremental Costs:	US\$ 261,050
Project Impact:	37 ODP tonnes
Cost per ODP Kg phase out	US\$ 7

1. INTRODUCTION

The use of CFC's in refrigeration servicing accounts for a significant part of ODS consumption in Malta. This can be reduced by the introduction of improved working practices, recovery and recycling.

The servicing of refrigeration and air-conditioning in Malta can be divided into a number of different sectors: these include vehicle air-conditioners, domestic refrigerators and freezers, domestic, commercial and industrial air-conditioners, industrial refrigeration installations for food processing and food storage, and refrigeration equipment for food transportation. This equipment is serviced either by technicians directly employed with the importers or manufacturers of the equipment, or by self-employed technicians.

The level of technical education available to the service sector of the industry is generally low, resulting in a poor application of good working practices. No training is specifically available for refrigeration service technicians, since the technical education available in Malta tends to focus on the more traditional trades.

The program objective is to provide the necessary technical training to service technicians working in the refrigeration and air-conditioning industry to enable them to reduce the consumption of ODS refrigerants through improved handling of both substances and equipment as part of a refrigerant management program.

2. PROJECT DESCRIPTION

The training program will be carried out in co-ordination with those bodies who oversee the development of technical education and vocational qualifications.

Phase I: Train the Trainers

Due to the lack of facilities for refrigeration servicing training within the country, it is proposed to train the national trainers through training courses organised outside Malta. Refrigeration and air-conditioning technical training is not included within the national technical educational curriculum and this fact makes the introduction of better working practices very difficult. The lack of facilities also includes the lack of trainers and it will be one of the first tasks of the National Ozone Officer to identify suitable local skilled personnel to receive training abroad.

This will enable the eventual trainers to come into contact with organised training programs which should preferably be in a country which has already implemented an ODS phase-out program. It is suggested that the trainers attend courses in refrigerant handling and management in the UK., where the language will also be of assistance. (English is one of Malta's official languages).

The trainers should undergo general training courses in Refrigerant Management and Safe Working Practices, together with specialised courses related to specific areas of the industry.

The selection of appropriate training courses will be made in accordance with the National Refrigerant Management program, and courses will include codes of conduct and certification for the authorised handling of refrigerants.

Attendees for this phase will be selected from:

- Technical instructors in related fields

- Maintenance managers from industrial companies with refrigeration equipment

- Service managers from companies in the refrigeration sector.

These personnel will participate in Phase II of the project.

Phase II: Training the Service Technicians

The trainers will be utilised to carry out training programs to reach all technicians who service refrigeration and air conditioning equipment. There are currently 260 service technicians working on domestic, commercial and industrial refrigeration and air conditioning equipment. It is expected that this number will increase to 320 by 1998. The following courses are required:

General Course for the Better Handling of Refrigerants

This is a three day course to be attended by all technicians in the service sector. The course will be held on a monthly basis for groups of ten technicians for the duration of the three-year programme. The course will provide a certificate of competence for the technicians to practice in the refrigeration and air-conditioning service sector.

Specialised two day Courses for-

Domestic Refrigeration	180 technicians
Vehicle air-conditioning	60 technicians
Industrial Equipment	60 technicians

These specialised training courses will be structured along parallel lines to existing vocational qualifications in Malta, which are based on the British City and Guilds certificates. The courses will be held on a regular basis and twelve sessions will be offered annually. They will be carried out with the co-operation of Trade Associations and Commercial Bodies, e.g. the Chamber of Commerce, the Federation of Industries.

These courses will accomplish the training of all technicians in the service sector and enable the complete phase out of ODS refrigerants being released to the atmosphere due to bad practices.

Phase III Monitoring

A refrigeration expert/consultant will be appointed for monitoring of the effectiveness of the training programme and will be expected to submit regular reports. The supervision of the training will be carried out by the National Ozone Office.

At the end of the project, the training materials will be passed on to the relevant Educational Authorities to be incorporated on a permanent basis into the current National Vocational Qualifications (Technician Apprenticeship Schemes).

3. Time Frame

This will be the primary task of the National Ozone Office once this is set up. We expect the National Ozone Office to be in place in the latter part of 1995, and Phase I, Training the Trainers, to commence in early 1996.

The complete program to train all service technicians will be completed over a period of three years.

4. Inputs

The Government of Malta will provide resources to the project in the form of management and administrative services.

The National Ozone Office is to provide administrative and logistic support, together with the necessary human resources for the co-ordination of the project.

5. Budget

	1996 US \$	1997 US \$	1998 US \$
PHASE I			
Travelling Expenses (10 persons)	36,000		
Course costs	20,000		
Materials	3,000		
PHASE II			
Premises Rental	5,000	5,000	5,000
Incentives for Trainers	20,000	20,000	20,000
Teaching Aids	3,000	3,000	3,000
Consumables	8,000	8,000	8,000
Equipment	(covered by other project)		
Project & Communication Costs	5,000	5,000	5,000
PHASE III			
Refrigeration Expert	15,000	15,000	15,000
	115,000	56,000	56,000
Contingency (15%)	17,250	8,400	8,400
TOTAL	132,250	64,400	64,400

BUDGET TOTAL SUS 261,050

Notes:

Malta is a small island with a varied industrial base. Due to the limited population the fixed overhead for the project is relatively high.

The rent for the premises is subsidised by government under a system for training grants.

Teaching aids are to be provided by UNEP with a small allowance for photocopying and preparation of materials for distribution.

6. Outputs

The project will provide

- * Good refrigerant management to comply with the national policy for the phase out of ODS substances
- * Increased awareness of better working practices
- * Reduction in the consumption of ODS refrigerants

7. Conclusion

In the opinion of the Government of Malta, the training program provides the most effective solution for the reduction of Ozone Depleting Substances at the lowest possible cost.

PROJECT COVER SHEET

Country:	MALTA
Project Title:	EQUIPMENT FOR RECOVERY AND RECLAMATION OF ODS IN THE REFRIGERATION AND AIR-CONDITIONING SECTOR
Implementing Agency:	UNEP
National Implementing Agency:	ENVIRONMENT PROTECTION DEPARTMENT
Consumption of controlled substances:	111.1 ODP weighted metric tonnes
Project duration:	3 YEARS
Project Objective:	Better management of ODP substances used in refrigeration and air conditioning
Justification:	Provision of appropriate technology and equipment to enable the refrigeration service industry to comply with phase out requirements.
Sectors covered:	REFRIGERATION AND AIR CONDITIONING
Total Incremental Costs:	US\$ 339,300
Project Impact:	40 ODP tonnes
Cost per ODP Kg phased out	US\$ 8.5

1. INTRODUCTION

In order to comply with the target for complete phase out for CFC refrigerants, it is necessary to provide the necessary equipment for the training of service technicians, and for utilisation by personnel working in the industry.

CFC's are used as refrigerants in the installation of new equipment and in the servicing of existing equipment. The greater part of consumption is attributed to the servicing of existing equipment.

By training service personnel to operate the appropriate equipment, and by providing the equipment for their use, this project will enable the reduction of consumption through better management of the existing refrigerant base.

2. PROJECT DESCRIPTION

The refrigeration service industry is constituted by a wide variety of equipment importers who provide a back up service, together with small self employed operators offering maintenance and installation services.

There are currently no facilities or equipment available for the recovery and reclamation of refrigerants.

The Government of Malta intends to purchase the following equipment .

DESCRIPTION	REFRIGERANTS	QTY
Reclaim station for the cleaning of refrigerant	R11, R12, R502, and others	2
Portable recovery station for the recovery and cleaning of refrigerant	R12 and R502	10
Portable recovery pumps for the collection of refrigerant	R12 and R502	30
Collection cylinders for the storage of recovered refrigerants	R12, R12 and R502	80
Automatic safety scales for refilling of cylinders		12

This equipment will be used for training and also made available to industry to ensure the implementation of the ODS phase out in accordance with the national strategy.

A small quantity of equipment will be retained for the duration of the training programme to be used for training and demonstration purposes. At the end of the programme this equipment will be handed over to the relevant Educational Authorities for integration with training offered under the National Vocational Qualifications.

The remainder of equipment will be made available to industry under one of two schemes.

The first scheme will incorporate the larger items of equipment. These will be made available to any user who has an application for the equipment, whether a plant operator or equipment supplier. The equipment will be loaned to the user for the duration of the project. The criteria for the management of the scheme will be established by the National Ozone Office, after consultation with the National Ozone Team. In the initial phases of the project, the National Ozone Office will monitor the effectiveness of the equipment loan scheme. This equipment will remain the property of the Government of Malta.

The second scheme will make the smaller items of equipment available to all operators in the industry. The equipment is to be granted by the National Ozone Office after an assessment of the applicants' requirements is carried out by the National Ozone Team. The criteria will include the expected reduction in ODS consumption by the applicant, and the competence of the applicant or his staff in the operation of the equipment (i.e. attendance at training courses offered through the Training Project). Monitoring of the equipment usage will be performed by the National Ozone Office to evaluate the effectiveness of its use.

3. Time Frame

Orders for the equipment will be placed in early 1996. This is related to the Training Program and the National Phase-out Strategy. This will be the primary task of the National Ozone Officer.

4. Inputs

Administration of the equipment is to be provided by the Government of Malta.

The National Ozone Office is to manage the logistical operation of the equipment, together with management of the maintenance function and the operational aspects of the equipment usage.

5. Budget

All purchases in 1996.

DESCRIPTION	REFRIGERANTS	QTY	RATE US \$	TOTAL US \$
Reclaim station for the cleaning of refrigerant	R11, R12, R502, and others	2	25000	50000
Portable recovery station for the recovery and cleaning of refrigerant	R12 and R502	10	6000	60000
Portable recovery pumps for the collection of refrigerant	R12 and R502	30	3000	90000
Collection cylinders for the storage of recovered refrigerants	R12, R12 and R502	80	400	32000
Automatic safety scales for refilling of cylinders		12	800	9600
Servicing costs for three years				72000
Project and communication costs				10000
Contingency				15700
TOTAL				339,300

Note:

MALTA is a small island with a wide variety of activities in the commercial and industrial sectors. This wide range of activities necessitates the supply of sufficient equipment to cater for the different sectors.

6. Outputs

This project will

- * Provide the equipment for training in good refrigerant management working practices.
- * Make available to industry equipment for the physical management of ODS substances
- * Reduce the consumption of ODS refrigerants through recovery and recycling

7. Conclusion

This project will enable the refrigeration and air conditioning service sector to comply with the National Program through the introduction of good housekeeping, recycling and reclamation throughout the industry.