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Implementation of the Montreal Protocol

Seventeenth Meeting
Montreal, 26-28 July 1995

COUNTRY PROGRAMME: SAINT LUCIA

This document consists of:

- Transmittal Letter from the Government of Saint Lucia
- Country Programme Cover Sheet
- Country Programme Executive Summary



GOVERNMENT OF SAINT LUCIA

MINISTRY OF PLANNING, DEVELOPMENT AND ENVIRONMENT

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Economic Planning
Social Planning
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Architectural Section
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P. O. BOX 709,
CASTRIES,
SAINT LUCIA, WEST INDIES.

31 May 1995

The Chief Officer
Secretariat of the Multilateral Fund
Montreal Protocol
1800 Mc Gill College Avenue
Montreal Trust Building
27th Floor
Montreal, Quebec
Canada
H3A 3J6

Dear Sir,

TRANSMITTAL LETTER: SAINT LUCIA COUNTRY PROGRAMME

I have the honour to attach hereto Saint Lucia's Country Programme under the Montreal Protocol for the phase out of Ozone Depleting Substances. The Country Programme is submitted on behalf of the Government of St Lucia by the Ministry of Planning, Development and Environment. This Ministry is the Government Department with primary responsibility for environmental planning, and coordinated the preparation of the Country Programme.

Saint Lucia acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer in July 1993. Instruments of ratification of the London and Copenhagen Amendments are being prepared and will be deposited at the United Nations Headquarters in due course.

As a Party to the Protocol, and based on its per capita consumption of ODS, Saint Lucia is classified as an Article 5 Country, eligible for assistance from the Multilateral Fund in implementing its phase out programme.

Support for the phase out strategy as enunciated in the Country Programme has come from several quarters. It was endorsed by the Country Team, comprising both private and public sector representatives, and has received the full support and commitment of the Ministry of Planning, Development and Environment. In addition, the Cabinet of Ministers, at their meeting of 18 May 1995 approved the Country Programme both in content and in spirit. This support from the highest decision-making body on the island is clear indication of the commitment of the Government of Saint Lucia to implement the actions outlined in the Country Programme in order to comply with the island's obligations under the Protocol to protect the ozone layer.

...../2

The Chief Officer
Secretariat of the Multilateral Fund

31 May 1995

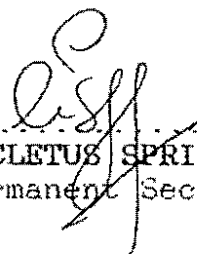
In addition to the actions identified in the Country Programme, the Government of Saint Lucia will monitor the island's compliance with the Protocol and will continuously review its phase out activities and schedules to achieve the total phase out of ODS in the shortest possible time, bearing in mind the Government's strategy statement in the Country Programme.

The implementation of the Country Programme will require the dedicated services of one officer with appropriate institutional, administrative and secretarial support to carry out his duties effectively. Whereas the Government of Saint Lucia is willing to provide the support necessary to implement the Country Programme, the assistance of the Multilateral Fund is essential if the island is to meet its obligations under the Protocol, and indeed its commitment to the health of the planet, by protecting the Ozone Layer. In this regard, a request for institutional strengthening, including the provision of an ozone officer with appropriate support equipment is submitted as an integral part of the Country Programme for approval by the Executive Committee of the Multilateral Fund. Additional project to achieve the phase out targets set in the Country Programme will be submitted through this Ministry after further consultations with industry actors.

The Government of Saint Lucia looks forward to the Executive Committee's approval of this Country Programme, including the proposal for institutional strengthening, both of which are pre requisites for the implementation of the Government's phase out strategy.

Accept Sir, the assurances of our highest consideration.

Yours faithfully,


.....
CLETUS SPRINGER
Permanent Secretary

COVER SHEET

Country: Saint Lucia **Date Received:**

Lead National Agency: Ministry of Planning and Environment

**Period covered by
Country Programme:** 1995-2010

**Lead Implementation
Agency:** UNEP

1. Phase Out Schedule

Substance	Current Consumption (Tonnes x ODP) in 1993	Planned total consumption till phase-out (Tonnes x ODP)	Planned year of Phase out
CFC-11	0.158	-	1995
CFC-12	6.042	46.42	2008
CFC-113	-	-	-
CFC-114	-	-	-
CFC-115	0.397	2.277	2005
Halon 1211	0.14	0.24	1995
Halon 1301	0.72	1.20	1995
CTC	-	-	-
MC	-	-	-
Total	7.457	50.137	

2. Government Action Plan

Year(s)	Description of Action	Sector (if any)	Intended effect	Estimated Costs US \$
1995-1997	Institutional Strengthening	All	Management of ODS Phase-out	76,900

4. Costs

Cost of activities and projects in Country Programme: US\$ 76,900
Estimated cost of complete phase-out US\$ 700,000

5. List of Potential ODS Phase-out Projects

Sector	Name	Action	Time Frame	Intended effect [ODS MT]	Estimated Cost [US \$]	Priority
All Sectors	Government	Establishment of Ozone cell	1995-1997		76,900	1
All Sub-sectors of Ref. and A/C	Community College	Training	1996 onwards	2.49	40,000	2
Dom. Ref.	Wintech Ltd.	Conversion of production	1995 - 1997	9.55	80,000	3
Industrial Ref.	End user	Retrofitting	1998 - 2002	20.624	370,000	4
Commercial Ref.	End user	Retrofitting	1998 - 2002	0.119	30,000	4
MACs	Service Agencies	Recovery and Recycling	1996 - 2008	5.676	17,000	4
Industrial Ref.	Service Agencies	Recovery and Recycling	1998 - 2001	2.572	8,000	4

EXECUTIVE SUMMARY

Saint Lucia, a member of the Caribbean Community and part of the Windward Islands in the West Indies acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on substances that Deplete the Ozone Layer in July 1993. On the basis of its consumption St. Lucia qualifies as an Article 5 country under the Protocol.

The Government of St. Lucia entered into an agreement with UNEP IE to conduct a survey on the supply and use of ODSs in the country in order to prepare a Country Program that would express the Government's commitment to implementing the phase out of ODSs and also enable it to approach the Multilateral Fund for assistance in funding projects identified for phase out.

Supply and Use of ODSs in St. Lucia

There is no production of ODSs in St. Lucia and all requirements are met through imports.

The substances imported in 1993 in any significant quantities were CFC-11, CFC-12, R-502, Halon 1211 and Halon 1301. The total consumption of ODSs in that year is 7.49 MT as estimated by end use.

There are three major importers who import CFC's and other refrigerant gases while Halons have been imported by the user directly.

Uses of ODSs

The major use of ODSs in St. Lucia is in the refrigeration and airconditioning sector. The import of Halons has been discontinued and existing uses, if any are from stocks.

In refrigeration the principal substances used are CFC-12 and R-502, CFC-11 which was used occasionally for flushing is no longer imported.

The principal uses of CFC-12 are in charging and servicing of domestic refrigerators and deep freezers, in mobile airconditioning for recharging and for recharging commercial and industrial refrigeration equipment.

R-502 is used for recharging in industrial and commercial refrigeration applications.

The Table below shows different uses of ODSs in St. Lucia.

**Estimated consumption of ODSs by end use and application
(For 1993)**

USER SECTOR	SUBSTANCE	APPLICATION	CONSUMPTION (Metric Tonnes)	
			Annex A Group I	Annex A Group II
Domestic Refrigerator	CFC -12	Initial charge during manufacturing	0.039	
	CFC - 12	Servicing of Refrigerators & Freezers	2.574	
	CFC-11	- do - (For Flushing)	0.158	
Commercial Refrigeration	CFC - 12	Servicing of Bottle coolers/ Soda fountains	0.015	
	R - 502	Servicing of Bottle coolers/ Soda fountains	0.014	
	CFC - 12	Servicing of Display Cabinets	0.005	
	R - 502	Servicing of Display Cabinets	0.005	
Industrial Refrigeration	R - 502	Servicing of cold stores	1.149	
	CFC - 12	Servicing of cold stores	0.726	
Mobile AirConditioning	CFC - 12	Servicing of car air-conditioners	2.683	
Fire Fighting	Halon 1211	Recharging of Portable/Trans-portable fire extinguishers		0.048
	Halon 1301	Recharging of Fixed flooding units		0.072
Total (in MT)			7.368	0.120
Total (in ODP Tonnes)			6.598	0.864

Profile of users

The users in St. Lucia are predominantly service agencies which service domestic refrigerators and freezers, commercial equipment and mobile (car) airconditioners and also refrigeration systems in hotels, supermarkets, the dairy, the brewery and the Fish Marketing Board. Some of the larger hotels service their own installations.

There is one institution for training service technicians, namely the Arthur Lewis Community College.

Forecast of Consumption

The economy of St. Lucia has witnessed a fairly healthy growth in the recent past. Tourism, which is a key sector in the economy is set to grow rapidly which in turn would result in an increased number of hotels and other services.

Except mobile airconditioning, where the phase-in of substitutes has already commenced, the consumption of ODSs in the unconstrained situation is likely to grow from 4 MT (ODP) to 6 MT (ODP) per annum over the next 10 years.

Government and Industry Responses to the Protocol

While the Government has taken the initiative to constitute a Country Team and prepare a Country Programme, some agencies in the country have responded in their own way to the Protocol.

For instance, the domestic manufacturer of refrigerators has planned to convert his assembly line to assemble refrigerators based on HFC-134a. The Fire Services Dept has recommended fire fighting systems based on alternatives to Halons in commercial and government buildings.

Phase out strategy

The Government of St.Lucia is committed to phase out the use of ODSs in the shortest possible time taking into account:

availability of substitute technologies and their costs

the residual life of existing ODS based equipment

and the need to invoke legislative and policy measures where required, consistent with existing regional treaties.

Government actions involve institutional strengthening, encouraging early adoption of equipment based on substitutes, training of service personnel and use of administrative and fiscal measures for monitoring and controlling imports of ODS and ODS based equipment.

The following table gives the timing of various actions contemplated for realising the phase out strategy.

TIMING OF ACTIONS

SECTOR	PROPOSED ACTION	PROPOSED DATE OF ACTION
ALL	* Institutional strengthening	01/07/95
DOMESTIC REFRIGERATION.	* Local assembly of refrigerator to switch to HFC-134a.	01/01/96
	* Import of CFC-12 based refrigerators to be stopped.	01/01/97
INDUSTRIAL REFRIGERATION.	* Restrict of import of all industrial refrigeration equipment based on ODS.	01/01/97
	* Initiation of retrofitting Industrial refrigeration equipment with ODS free technology.	01/01/98
	* Recovery and recycling of CFC-12 and R-502.	01/01/98
MOBILE A/Cs	* Restrict import of cars with CFC-12 based A/Cs.	01/01/96
	* Recovery and recycling of CFC-12.	01/01/98
COMMERCIAL REFRIGERATION.	* Ban on imports of commercial refrigeration equipment using ODSs.	01/07/96
	* Initiation of retrofitting comun. ref. equipment with ODS free technology.	01/01/98
ALL SUB-SECTORS OF REF. & A/C	* Training service staff for reducing wastage through better practices.	01/07/96

Projects

Projects which have been tentatively identified under the program for phase out are as follows :

1. Project for conversion of production facility for domestic refrigerators and freezers to use HFC-134a instead of CFC-12
2. Project for training 'trainers' in the airconditioning and refrigeration sector in better maintenance practices and building training infrastructure in the servicing of equipment based on HFC-134a etc.

3. Projects for retrofitting of Industrial and Commercial Refrigeration equipment to use non-ODS alternatives. This would be based on inputs collected at enterprise or installation level to draw up a refrigerant management plan and identification of projects for funding under MFS guidelines.
4. Project for equipping service agencies with recovery and recycling equipment to be used in servicing of mobile air conditioners and other industrial refrigeration units.

Actions and their intended effect

Sector	Name	Action	Time Frame	Intended effect [ODS MT]	Estimated Cost [US \$]	Priority
All Sectors	Government	Establishment of Ozone cell	1995-1997		76,900	1
All Sub-sectors of Ref. and A/C	Community College	Training	1996 onwards	2.49	40,000	2
Dom. Ref.	Wintech Ltd.	Conversion of production	1995 - 1997	9.55	80,000	3
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MACs	Service Agencies	Recovery and Recycling	1998 - 2008	5.876	17,000	4
Industrial Ref.	Service Agencies	Recovery and Recycling	1998 - 2001	2.572	8,000	4

Incremental Cost and Funding Priorities

The Government of St. Lucia estimates an incremental cost to the country for phasing out ODS to be of the order of US \$ 700,000. This covers the anticipated costs in the government and user sectors. It is believed that by early adoption of alternative technologies and recovery and recycling the costs in the consumer sector will be minimised if not eliminated.

The Government of St. Lucia is submitting a project proposal for institutional strengthening with the country programme for which the detailed budget is furnished herein and for which funding is requested from MFS. The project proposals for the other projects will be furnished in due course.

Budget for Institutional Strengthening Project

(Figures in US \$)

Item	Year		
	1995	1996	1997
<u>Personnel costs</u>			
Ozone Officer	10000	20000	20000
<u>Infrastructure</u>			
Computer, printer and software	6300	-	-
Photocopier	7500	-	-
Overhead Projector	800	-	-
Typewriter	1500	-	-
Accessories (furniture)	700	-	-
<u>Operating Costs</u>			
Office Supplies and Stationery	1000	1000	500
Publicity Material	500	1000	-
Meetings and Seminars	800	1000	700
Equipment maintenance charges	1200	1200	1200
Total	30300	24200	22400
Grand Total			76900

PROJECT PROPOSAL FOR INSTITUTIONAL STRENGTHENING

Project Title: Establishment of an Ozone Cell

Sectors Covered: All

ODS Consumption:-

Project Duration: 3 Years

Total Incremental Cost: US \$ 76,900

IMPLEMENTING AGENCY UNEP

National Coordinating Agency: Ministry of Planning,
Development and Environment

PROJECT SUMMARY

The Ministry of Planning, Development and Environment has been looking after all the activities relating to compliance with the Protocol since St. Lucia became a signatory. With the formulation of the Country Programme and the identification of various activities required to be coordinated at a central point there is a need to build up institutional capability within the Environment Section to manage these activities. This project is concerned with establishment of this capability.

PROJECT DESCRIPTION

The Ministry of Planning, Development and Environmental is the department of the Government that will be implementing the Country Programme.

Hitherto the work connected with the Protocol and Country Programme activities have been looked after by the Environmental Section in the above Ministry. The Environmental section looks after a multitude of matters including those relating to Energy and Technology and other environmental issues.

The Country Programme envisages a number of activities to be coordinated and completed within the next 2-3 years which could require full time attention and support at least for the first two years.

These cover:

- Acting as the nodal resource point for all Protocol related matters.
- Coordinating the formulation and submission of project proposals under the Country Programme for funding.
- Interministerial and inter-departmental coordination for implementing administrative measures.
- Information gathering and dissemination on Ozone related issues in terms of public awareness and education.
- Monitoring consumption of ODS and reporting to the Protocol Secretariat under Article 7.
- Regional coordination and collaboration to ensure that regulations and policies are consistent with existing Regional Trade Agreements.
- Submitting to the Executive Committee a Progress Report on the implementation of the Country Programme on a yearly basis, following the format approved by the Committee (UNEP/OzL.Pro/ExCom/13/47 Annex II).

It would be therefore necessary to have a person dedicated to this activity with requisite secretarial support.

It is proposed that a cell be created within the Environment Section with an Ozone Officer in charge. This person would have the

support of a secretary/research assistant.

While it is envisaged that the office space and amenities would be provided by the Ministry, the cell would require infrastructure and a budget to carry out its activities.

The infrastructure would be in terms of a computer system, a photocopier, a typewriter, an overhead projector and a FAX machine. The budget would cover expenses on activities mentioned earlier and would include

- Manpower costs
- Operating costs including
 - Stationary and supplies
 - Conferences and meetings
 - Publicity materials.

The proposed budget is presented in the Exhibit alongside.

Project Time Frame

Technically the project life is till complete phase out is achieved in St. Lucia. However, it may be presumed that much of the activity will take place over the next 18-24 months.

Incremental Costs

All the costs indicated above may be considered as incremental costs and eligible for funding by the Multilateral Fund.

Exhibit 3.5

Budget for Institutional Strengthening Project
(Figures in US \$)

Item	Year		
	1995	1996	1997
Personnel costs			
Ozone Officer	10000	20000	20000
Infrastructure			
Computer, printer and software	6300	-	-
Photocopier	7500	-	-
Overhead Projector	800	-	-
Typewriter	1500	-	-
Accessories (furniture)	700		
Operating Costs			
Office Supplier and Stationery	1000	1000	500
Publicity Material	500	1000	-
Meetings and Seminars	800	1000	700
Equipment maintenance charges	1200	1200	1200
Total	30300	24200	22400
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**COUNTRY PROGRAMME
FOR SAINT LUCIA
UNDER THE
MONTREAL PROTOCOL**

29 June 1995

EXECUTIVE SUMMARY

Saint Lucia, a member of the Caribbean Community and part of the Windward Islands in the West Indies acceded to the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on substances that Deplete the Ozone Layer in July 1993. On the basis of its consumption St. Lucia qualifies as an Article 5 country under the Protocol.

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The Government of St.Lucia is committed to phase out the use of ODSs in the shortest possible time taking into account:

- n availability of substitute technologies and their costs
- n the residual life of existing ODS based equipment
- n and the need to invoke legislative and policy measures where required, consistent with existing regional treaties.

Government actions involve institutional strengthening, encouraging early adoption of equipment based on substitutes, training of service personnel and use of administrative and fiscal measures for monitoring and controlling imports of ODS and ODS based equipment.

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MOBILE A/Cs	* Restrict import of cars with CFC-12 based A/Cs.	01/01/96
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COMMERCIAL REFRIGERATION.	* Ban on imports of commercial refrigeration equipment using ODSs.	01/07/96
	* Initiation of retrofitting comm. ref. equipment with ODS free technology.	01/01/98
ALL SUB-SECTORS OF REF. & A/C	* Training service staff for reducing wastage through better practices.	01/07/96

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Budget for Institutional Strengthening Project

(Figures in US \$)

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Photocopier	7500	-	-
Overhead Projector	800	-	-
Typewriter	1500	-	-
Accessories (furniture)	700	-	-
<u>Operating Costs</u>			
Office Supplies and Stationery	1000	1000	500
Publicity Material	500	1000	-
Meetings and Seminars	800	1000	700
Equipment maintenance charges	1200	1200	1200
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PREFACE

St. Lucia, a member of the Caribbean Community and the Organisation of the Eastern Caribbean States is an island country which is situated in the Windward Islands in the West Indies.

Its land area is approximately 616 sqkm. and population in 1994 was 142,689. The predominant sectors in the economy are Agriculture and Tourism. St. Lucia is a major exporter of bananas, mainly to the E.C.

The GDP of St. Lucia is approximately EC\$ 1.11 bn growing at the rate of 3% per annum. The overall economic situation is subject to fluctuations arising out of the performance of the banana industry and to some extent, the tourist traffic.

There is no local production of Ozone Depleting Substances (ODSs) in St. Lucia and all the demand, which by global standards is not significant, is currently met through imports. The Government of Saint Lucia is however concerned about protecting the Ozone layer and accordingly acceded to the Vienna convention for the protection of the Ozone Layer and the Montreal Protocol on substances that Deplete the Ozone Layer in July 1993. It is classified as a developing country under Article 5 of the Protocol on the basis of its per capita consumption of Ozone Depleting Substances.

The Government of Saint Lucia has undertaken to formulate a Country Programme as a key step towards complying with the Montreal Protocol. This document presents the same in accordance with the approved format for presentation of country programmes to the Executive Committee.

1. INTRODUCTION

1.1 PURPOSE

The Country Programme prepared by the Government of Saint Lucia reflects the commitment of the Government to comply with its obligations as a party to the Protocol. It describes the current situation, the proposed strategy and the Action Plan for phasing out Ozone Depleting Substances. It reflects the nature of projects envisaged in implementing the Action Plan for which assistance would be required from the Multilateral Fund. It also presents the data on consumption of controlled substances for reporting under Article 7.

Finally, the Country Programme provides the basis for monitoring the implementation of the Action Plan in terms of milestones for phasing out each group of substances in each sector.

1.2 STATUS

The Country Programme preparation was coordinated and overseen by the Environment Section of the Ministry of Planning, Development and Environment of the Government of St. Lucia.

The Ministry would be seeking the approval of the Cabinet on the finalised Country Programme before submission to the Executive Committee. The costs of preparation of the Country Programme are estimated at US \$ 30,000.

1.3 ASSISTANCE RECEIVED

In the preparation of the Country Programme the Government of Saint Lucia has received assistance from the UNEP both by way of funds as well as being provided the services of a consultant from a professional consulting firm.

Other agencies who assisted in the Country Programme preparation included various Government departments and ministries, enterprises in the private sector and technical specialists.

2. CURRENT SITUATION

2.1 Current and Forecast Consumption of ODSs

2.1.1 Current Consumption

There is no production of any ODS in St. Lucia. The entire requirement is met through imports. The major substances consumed are CFC-11, CFC-12, R-502 and Halon 1211 and 1301.

An extensive survey revealed that there are three major importers of ODSs in St. Lucia. In addition some large users have been known to import their requirement of ODS directly from overseas from time to time. This includes users of Halons.

The major international suppliers of ODS to St. Lucia are international traders based in the US, Europe and the Caribbean and the common brands imported are those of Dupont and Allied Chemicals.

The estimated consumption based on imports is given in Table 2.1 (a).

Table 2.1 (a)
Current (1993) Consumption of ODSs in Saint Lucia

Substance	Production(A)	Imports (B) (in MT)	Export (C)	Consumption (A+B-C) (in MT)	ODP	ODP Tonne s
Annex A Group I						
CFC - 11	-	0.158	-	0.158	1.00	0.158
CFC - 12	-	7.112	-	7.112	1.00	7.112
R - 502	-	4.196	-	4.196	0.34	1.427
Sub Total				11.466		8.697
Annex A Group II						
Halon 1211	-	0.048	-	0.048	3.00	0.144
Halon 1301	-	0.072	-	0.072	10.0	0.720
Sub Total				0.120		0.864
Total						9.561

Source: Field Survey

The consumption of Annexe-A ODSs in St. Lucia in 1986 is furnished in Exhibit-2.1 in Annexure 1.

The prices of various ODSs as reported by one of the importers are as given in Table 2.1 (b).

Table 2.1 (b)
Prices of various ODSs

Substance	Price (1993) in US \$ per Kg
CFC - 11	10.95
CFC - 12	10.30
R - 502	30.89

The various duties/taxes applicable on these substances are :

Import duty - 10%

Consumption Tax - 25%

Service Charge - 4%

Use of ODSs

The ODSs in St. Lucia are largely used for recharging of refrigeration and air conditioning equipment. They are also used for initial charging of domestic refrigerators and freezers assembled in the country and in the past, for recharging fire-fighting equipment.

Table 2.2 gives estimated consumption of ODS by end use and application for the year 1993. The consumption by end-use has been estimated based on responses received through a field survey covering various categories of users of ODS and forms the basis for all projections. A list of respondents is provided in Exhibit 2.2 in Annexure 1. Figure 1.1 and 1.2 graphically show the proportion of use of ODS in St. Lucia by type of ODS and by end use respectively.

A comparative analysis of Table 2.1 (a) and Table 2.2 shows that consumption of Annex A Group I substances by end use and application is lower than the same compiled from imports, which is attributed to build up in stocks in 1993.

Table 2.2
Estimated consumption of ODSs by end use and application
(For 1993)

USER SECTOR	SUBSTANCE	APPLICATION	CONSUMPTION (Metric Tonnes)	
			Annex A Group I	Annex A Group II
Domestic Refrigerator	CFC -12	Initial charge during manufacturing	0.039	
	CFC - 12 CFC-11	Servicing of Refrigerators & Freezers	2.574	
	CFC - 12	- do - (For Flushing)	0.158	
Commercial Refrigeration	R - 502	Servicing of Bottle coolers/ Soda fountains	0.015	
	CFC - 12	Servicing of Bottle coolers/ Soda fountains	0.014	
	R - 502	Servicing of Display	0.005	
	R - 502	Cabinets	0.005	
Industrial Refrigeration	CFC - 12	Servicing of Display Cabinets	1.149	
	CFC - 12 Halon	Servicing of cold stores		
Mobile AirConditioning	1211	Servicing of cold stores	2.683	0.048
Fire Fighting	Halon 1301	Servicing of car air- conditioners		0.072
		Recharging of Portable/Trans-portable fire extinguishers		
		Recharging of Fixed flooding units		
Total (in MT)			7.368	0.120
Total (in ODP Tonnes)			6.598	0.864

2.1.2 Forecast Consumption

The future demand in the 'unconstrained situation' for various ODSs has been calculated based on the methodology explained below for each of the end uses. In such a situation it is assumed that no attempt is made to comply with the Protocol and unrestrained quantities of ODSs continue to be available from existing sources at current prices.

The only exception made has been in the case of MAC's where such an assumption has been modified as explained later.

Domestic Refrigerators and Deep Freezers

The consumption of ODS in this sub-sector was forecast based on the future demand of refrigerant for refrigerators and freezers manufactured domestically and the recharge requirement of the population of refrigerators and deep freezers in service.

The population of equipment in service was estimated taking into account the penetration and population in the base year in the household sector and the non-household sector, the growth in each sector and the scrap rate based on the life of such equipment which, in St. Lucia is estimated at 10 years.

The recharge requirement was calculated using norms for recharge and frequency of recharge provided by service agencies during the field survey. For the locally manufactured equipment the refrigerant requirement for charging was computed using the manufacturer's production plans and the norm for charging.

CFC-11 was previously used in flushing of domestic refrigerators and it has been discontinued.

Mobile Airconditioners (MAC's)

The consumption of ODS in this sector was estimated based on the population of airconditioned vehicles on the road and the norm for recharging a unit, as provided by service agencies contacted during the survey.

For the population, the number of airconditioned vehicles on the road was estimated from the field survey and secondary data. The future growth was based on likely increase in the car ownership. It was assumed that even in the unconstrained situation all new cars would be fitted with airconditioners based on HFC-134a as that change has already taken place in the market. However, it has also been recognised that a certain percentage of 'reconditioned' cars would be imported until the year 2000 which would have airconditioners based on CFC-12.

The population from year to year was forecast taking into account the scrap rate, also derived on the basis of survey inputs.

Commercial Refrigeration

Bottle Coolers (including Soda Fountains) and Display Cabinets

The present population was based on the estimate of penetration, i.e. number of units per 1000 of population.

Service agency inputs were used to assess the proportion of equipment based on R-502 and CFC-12, the recharge norms and frequency. Growth rates were assumed based on general economic parameters to assess future population and scrap rates based on estimates of the life of the equipment.

Industrial Refrigeration

The consumption of ODS in this sector was assessed on the basis of the existing population of refrigeration units in cold rooms, freezers, ice machines and cold stores in hotels, supermarkets, the Dairy, the Brewery, the Fisheries Board and the St. Lucia Marketing Board.

These were again classified by refrigerant used such as R-502, CFC-12 and CFC-22.

The norms for recharging were based on survey inputs.

The growth in population was based on growth of the end use areas and life of equipment.

Exhibit 2.3 in Annexure 1 provides some key statistics on the base population, growth percentage, recharge norms and equipment life for each of the sub sectors above.

Fire Fighting

There is only one company reported to have Halon based fire fighting systems in St. Lucia. The future demand for recharging in the unconstrained situation was estimated to be constant and based on the average of the last 3 years consumption of Halon 1211 and Halon 1301 for recharge purpose.

Annexure 2.1 gives the estimated future consumption of various ODSs till year 2010. Figures 2.1 and 2.2 show the future unconstrained consumption and Protocol limits for Annex A Group I and Annex A Group II substances respectively.

The future consumption of Annex A Group I substances is declining because the population of CFC-12 based mobile a/cs, the single largest end use of ODSs in St. Lucia, is expected to decline in future as new airconditioned cars to be imported would be HFC-134a based.

Industry Structure

Saint Lucia does not manufacture any ODS. At the moment even manufacture of equipment using ODS is limited. Most equipment is therefore imported, mainly from North America and the EC.

Owing to the liberalised trade regime, import of goods take place quite freely. The type of goods imported tend to reflect trends in the country of origin rather than consumer trends in St. Lucia itself. This is inevitable, given the size of the market and presence of transnational companies in the trade.

In St. Lucia there is no foam blowing using ODS or aerosol filling; the main user sector is the Refrigeration and Air-conditioning sector. This can be further divided into the following sub sectors.

Sub sector	Nature of ODS Usage
Domestic refrigeration and deep freezers	* Charging in manufacturing/assembly * Recharging
Commercial refrigeration (Bottle coolers/ Soda fountains, Display cabinets, etc.)	* Recharging
Industrial Refrigeration (Cold Rooms, Cold stores)	* Recharging
Mobile air-conditioning (A/c cars, Vans, other LCV's)	* Recharging

There is only one manufacturer (assembler) of domestic refrigerators and freezers in St. Lucia. They have a capacity to produce 1500 refrigerators and 500 freezers which are currently based on CFC-12. Their unit has been in production since 1992. They are aware of the Protocol and are planning to switch over to an Ozone friendly refrigerant in the near future, for which they have

sought technical knowhow from their overseas supplier of sub assemblies to effect modifications to the assembly line.

For insulation they are using glass wool and imported polyurethane panels. No foam blowing is carried out by them.

Otherwise most of the refrigerators in Saint Lucia are imported. There are about eight importers of refrigerators, each importing a leading international brand. Based on the available data, Whirlpool Corporation, which is the market leader has started introducing its refrigerators based on HFC-134a in the market.

Servicing of refrigerators is undertaken by a few 'large' agencies as well as by a number of small repair shops. It is reported that a greater proportion of the servicing (which includes recharging) is carried out by the smaller agencies. It appears that many of them lack necessary equipment and facilities to ensure no wastage takes place during recharging.

Commercial Refrigeration

Most installations of commercial refrigeration equipment are in supermarkets or large stores and restaurants. The equipment is sourced from importers. The servicing and recharging of refrigerant is again carried out by numerous small service agencies.

Industrial Refrigeration

This subsector comprises Cold Rooms, Freezers and Ice machines, found in most of the large hotels and Super markets as well as with the St. Lucia Marketing Board the Fish Marketing Corporation and the Dairy.

The systems for these cold stores/cold rooms are imported. They are based on CFC-12, R-502 and also on HCFC-22.

The recharge requirements of these systems are either taken care by in-house service agencies (in about 35-40% of the cases) or by other local service agencies.

With over 25 hotels/resorts in the country and the expected growth in this sector this is a significant area of consumption. On the other hand there are no large buildings with central airconditioning plants based on ODS; they are invariably based on HCFC-22.

Mobile Air-conditioning

There are nine importers of cars in St. Lucia, each representing a major overseas manufacturer. Currently virtually all cars or vans imported are air-conditioned owing to the dictates of the climate of St. Lucia. The population of air-conditioned vehicles is estimated at around 8000 as on date. It is learnt that mobile airconditioners in St. Lucia require recharging or topping-up once in 2 years. It was also learnt that vehicle owners and mobile a/c service agencies prefer to top-up a/c units instead of identifying and fixing leaks because it was felt to be the cheaper option.

Servicing of these is undertaken predominantly by small garages or repair shops. Of late most of the cars imported are fitted with systems based on HFC-134a (One of the importers has informed that he has been also provided with recovery and recycling equipment for servicing HFC-134a based a/c's).

Fire Fighting

Another sector that has reported use of ODS is the firefighting sector.

In particular Cable and Wireless, the communication company, which has a Halon based fire fighting system has imported Halons for recharging its equipment and reported that it anticipates difficulties in obtaining supplies in the future.

A representative list of the companies from various sectors contacted during the survey is given in Exhibit 2.1 .

Importers of ODSSs

The major ODSSs imported into St. Lucia are refrigerant gases. Three of the larger service agencies are the dominant importers. They source their requirements from international traders based in the US, Europe, and the Caribbean. The brands imported are from Dupont and Allied Chemicals.

Some imports are also undertaken directly by users. For example Club Med, a resort, imports their requirement of CFCs directly from the US. However, this is infrequent. Virtually the entire industry, described above, is in the private sector.

Importers of Equipment using ODS

The importers of refrigeration and air-conditioning equipment as well as cars are dominated by large trading houses based on the island. In the case of domestic refrigerators the local manufacturer/assembler is also the agent for two or three international brands. Most of the industry is aware of the Protocol and keen to take measures to manage the consequences of the same on supply and usage of ODSSs.

2.3 Institutional Framework

This section describes the institutional arrangements existing in St. Lucia relevant to implementing the commitment to phase out consumption of ODSSs.

In St. Lucia the responsibility for environment management, in the broader sense is divided among a number of agencies including The Ministry of Planning, Development and Environment, The Ministry of Health, Information and Broadcasting, The St. Lucia National Trust, The Ministry of Agriculture, Lands, Fisheries and Forestry and The Ministry of Tourism.

At present the institution within the Government which has primary responsibility for policy formulation and management of environmental issues is the Ministry of Planning, Development and Environment.

Within this Ministry is a section concerned with Environment, Science and Technology, headed by an Assistant Secretary and supported by a few officers and staff. The section was set-up about three years ago. However it has been active in environmental planning only since 1993.

This section looks after all matters ranging from energy conservation to environment management. A research assistant has been appointed recently and has been entrusted with the data collection work for preparing the Country Programme under the Montreal Protocol.

As mentioned earlier the responsibility for environmental matters lies with a number of ministries and departments. There is no umbrella 'Environment Act' or framework in the country setting out their roles and responsibilities or their interrelation and coordination.

Thus, there is no statutorily defined body with a mandate for :

- Setting goals and objectives for environmental protection and natural resource management
- Formulating laws and regulations
- Administration of legislation
- Development of standards and codes of practice
- Inter departmental coordination
- Training, public awareness and sensitisation

However, there are a number of laws falling under the category of environmental legislation which are administered by different departments.

In this regard, the Government of St. Lucia has recently approved establishment of an Environmental Commission to coordinate programmes in the area of environmental protection. The Commission will be launched on 13th June 1995 and will play an important role in the phaseout programme.

There are laws covering various aspects of conservation and environment protection. Some are listed below:

Agriculture Small Tenancy Act
Beach Protection Act
Forest, Soil and Water Conservation Ordinance
Land Development Act
Litter Act
Oil in Navigable Waters Act
Pesticides Control Act
Public Health Act
Wildlife Protection Act

Likewise some of the departments which are the enforcing agencies for particular environmental areas are listed below:

Water and Sewage Authority - for Effluent Discharge
Pesticide Control Board - for Pesticide Level
Ministry of Health , - for Solid Waste Disposal
Information and Broadcasting

From the above, it may be seen that the implementation of the phase-out of ODSs will require creating an institutional entity, perhaps as part of the Environment Section, with the exclusive mandate to coordinate legislative, regulatory and implementation aspects of phase-out.

This sub-section or wing would for instance, initiate action to bring the labelling of goods containing ODSs under the purview of the Saint Lucia Standard for

Labelling of Commodities and coordinate with the Customs Department (Ministry of Finance) to monitor importation of such items into the country. Other functions could cover coordinating submission of project proposals and approvals, monitoring and reporting of consumption, coordination of training and public awareness programmes etc. A project proposal for institutional strengthening with details forms part of this Country Programme. Some of the other institutions which are likely to have a role in the implementation of phase out are:

- Ministry of Finance (Statistics & Customs Departments)
- Ministry of Trade and Industry (Price Control and Bureau of Standards)
- Fire Services Dept.
- Saint Lucia Industrial and Small Business Association
- Hotel and Tourism Association
- The Office of the Attorney General
- The Sir Arthur Lewis Community College
- St. Lucia Chamber of Commerce, Industry and Agriculture
- Automobile Dealers Association.

The roles of some of these bodies are highlighted in specific cases in the Action Plan set out in the section under "Implementation of Phase Out".

2.4 Policy Framework

The economy of St. Lucia is quite akin to many small island economies which have traditionally been dependent on commodity exports. Though exports of banana is still the mainstay of the economy, tourism has become the most dynamic sector of late with substantial investments taking place in related infrastructure.

The country has witnessed a fairly healthy growth in GDP over the period 1975 to 1992. There has also been a structural change in the economy with the share of agriculture in the GDP declining and a shift taking place towards services.

Throughout the above period the Government has been able to sustain a healthy level of public investment. Since 1993 however, the country has had to cope with pressures on its economy brought to bear by a disruption in banana production and exports, the phasing out of the EC's preferential arrangements for banana imports and a reduction in concessional aid flows.

The Government of St. Lucia has responded to the situation by formulating a medium term economic strategy which seeks to find ways to enhance growth and also take steps for diversification by encouraging private sector initiatives.

In managing the economy the Government has been able to adopt a tight fiscal policy and control wage levels in the public sector. On the other hand, it has pursued a liberalised trade regime with low rates of duty, a tax policy encouraging private sector development and growth and fiscal incentives such as tax holidays and duty free imports of capital equipment and raw materials for select sectors. Examples of these in the area of Tourism are provided by :

- The Hotel Aid Ordinance
- The Hotel Proprietors Act

which provide for a tax holiday, not less than 7 years and not exceeding 15 years, and import duty exemptions for construction material and furnishings for hotel projects.

These are in the process of being replaced by a Tourism Incentives Act.

In respect of laws and regulations pertaining to environmental issues, a number of laws exist, some of which were listed earlier.

In the context of ODS phase out it would seem that there are areas where additional laws or regulations would be required.

These could relate to, for example,

- Labelling of products

At present it is not mandatory for equipment using ODSs or products containing ODSs to declare their contents on the label. For instance aerosol products which are CFC based, cleaning agents which are ODS based or equipment like refrigerators which are CFC based are not required to carry a label to that effect.

Although there exists a Saint Lucia standard for the labelling of commodities, the process of making it a legal requirement is still under way.

- Certification and Licensing of Refrigeration Technicians

There is currently no requirement of accreditation of technicians repairing or servicing refrigeration and air-conditioning equipment, nor are there any codes of practice covering service or recharging procedures.

This would be an area where suitable regulations would have to be evolved.

- Regulations or standards for firefighting equipment
The Fire Services Department inspects all commercial and industrial premises and issues certificates regarding the adequacy of fire protection installations.

Though this department, since 1991, has advocated use of non-Halon based fire fighting systems there is no regulation in force and Halon based systems are still in use.

- Trade being relatively free, there are very few restrictions in respect of imports or in terms of licensing requirements. At the moment the Price Control Department in The Ministry of Trade issues licenses for certain categories of items. On one hand, this could be extended to specifically cover ODS's and equipment and products containing or using ODS's. More important is the need for classifying these items on a consistent basis which will allow monitoring of imports.

Fiscal instruments which the Government already employs could be extended to provide incentives for imports of ODS free equipment and disincentives for ODS based equipment.

The Action Plan describes the laws and regulations contemplated for introduction and the time frame for the same.

2.5 Government and Industry Responses to the Protocol

With its concern for the environment, the Government of Saint Lucia acceded to the Montreal Protocol in 1993 but is yet to ratify the London & Copenhagen amendments. Saint Lucia is classified as an Article 5 country under the Protocol.

One of the key initiatives taken by the Government since acceding to the Protocol has been to constitute a Country Team to formulate the Country Programme under the provisions of the Protocol. The Government has approached and obtained assistance from UNEP, both monetary as well as by way of deputation of a consulting firm to help in formulation of the Country Programme.

Notwithstanding the fact that the country became a signatory only recently, some agencies in the country have responded in their own way to the Protocol and the problem of Ozone Depletion.

For instance, the Fire Services Department which maintains the fire protection systems in Government buildings and issues certificates to all Commercial and Industrial premises regarding the adequacy of their fire safety measures, since 1991 has advised against use of Halon based systems.

All Halon-1211 extinguishers in Government Buildings have been replaced by CO₂ based fire extinguishers pending development of a more suitable substitute.

The only enterprise engaged in blowing foam in St. Lucia switched over to Methylene Chloride as a blowing agent about three years ago.

In some cases market forces have caused the adoption of ODS free technologies. The major player in domestic refrigerators, Whirlpool Corporation has introduced refrigerators based on HFC-134a primarily because manufacture of CFC-12 based refrigerators have been discontinued by them in North America.

Likewise most if not all car air conditioners now being imported are based on HFC-134a as the switch has been made at the manufacturers' end.

Given the dependence of the economy on imports for white goods, a major issue that will have to be addressed is the management of 'phase-in' rather than phase out after taking into account the investments already made in ODS technology and the need to maintain the same for a reasonable period.

3. IMPLEMENTING PHASE OUT

3.1 STRATEGY STATEMENT BY GOVERNMENT

The Government of St. Lucia is committed to phase out ODS consumption in the country in the shortest possible time.

The strategy of the Government will take into account the following:

- Availability of substitute technologies and their costs
- The residual life of existing ODS based equipment
- The need to invoke legislative and policy measures where required in respect of trade policies and regulations, maintaining consistency with existing OECS and CARICOM treaties.

The phase out schedules are derived from the elements of the Action Plan detailed out below.

3.2 ACTION PLAN

3.2.1 Government Actions

In keeping with the strategy above the Government will take the following actions:

1. With effect from 1.1.96 or as soon as possible before that date, Government will restrict the importation of vehicles fitted with ODS-based A/C units. This measure recognises that mobile airconditioners based on HFC-134a are available and are in fact fitted on most imported vehicles, and that kits to convert ODS-based MACs to HFC-134a are also available.

To achieve this Government will require that any vehicle with an ODS-based A/C unit must have that unit removed and, if so desired by the importer, replaced or retrofitted with an ODS-free unit before importation.

2. Ban import of refrigerators based on CFC-12 by 1.1.97. Importers in St. Lucia confirm that HFC-134a based refrigerators are available and in fact already being imported into the country. The sole local assembler of refrigerators is also proposing to switch over to assembly of refrigerators based on HFC-134a very soon.
3. Restrict/stop import of all commercial/industrial refrigerating equipment based on ODS technology with effect from 1.1.97. In most of these applications relevant to St. Lucia alternative technologies are currently available. Technologies are also available for retrofitting existing equipment. In contemplating this measure the Government also proposes to restrict the import of equipment for the above applications based on HCFC 22. The reason is that HCFC-22 is already identified as a controlled substance and wherever possible it would be better to invest in equipment based on completely ODS free technologies to avoid the prospect of a subsequent change over at a later date.

Such a restriction as contemplated would be enforced by having a system of bringing the import of industrial and commercial refrigeration equipment under the purview of licensing.

4. Government will monitor the imports of all ODS by making a license necessary for import. At present, however the Government will not impose any restriction on the import of ODSs other than Halons realising that such importation is necessary for servicing the large stock of ODS based equipment. Import of Halons would be banned on 1.1.96.

The monitoring of imports will enable, among other things, meeting reporting requirements under Article 7 of the Protocol.

5. The above restrictions on import of ODS and ODS based equipment will be supported by a series of fiscal and policy measures.

These include:-

- Measures to ensure that products and equipment containing ODS are so labelled either using the provisions of the existing standards or by initiating specific legislation as required.
- Taking up the issue of modifying the customs code for ODS and products in question at the CARICOM level
- Increasing consumption taxes and/or import duties on equipment/products based on ODS based technologies for which ozone friendly alternatives are available, in keeping with Regional Trade agreements.

6. In addition the Government will initiate actions aimed at increasing public awareness, improving skills of technicians and providing incentives for adoption of technologies and practices to conserve ODS and building an institutional framework to monitor, coordinate and implement the phase out programme.

Activities in this regard include:

Education & Training

The Government will examine the possibility of having a national programme for training of trainers in new technologies and better practices in refrigerator servicing and invest in facilities for the same. The Government will work with the Community College to enhance the curriculum for the course on air conditioning and refrigeration to include new technologies especially based on HFC-134a, retrofitting and recovery and recycling.

In addition the course on automobile maintenance would be suitably extended to cover mobile air conditioning also.

Following the Training of Trainers and setting up infrastructure, the Community College will conduct programs to train technicians on new technologies.

Thirdly the Refrigeration Industry together with the Ozone Cell will work with the College to evolve a program for certification of air-conditioning and refrigeration technicians.

Public Awareness

The Government, through the Ozone Cell will initiate programs aimed at informing consumers and the public of its the commitment to phase out ODSs and the alternatives available.

Incentives

Recognising that inspite of the restrictions contemplated in the very near future, there will continue to be a large number of ODS based equipment which have a substantial residual life the industry believes that appropriate recovery and recycling equipment could help conserve ODS consumption especially in the commercial and industrial refrigeration and mobile airconditioning sectors. Government will examine the nature of incentives that can be offered to acquire and put in service recovery and recycling equipment.

Institutional Strengthening

The Government will constitute within the Ministry of Planning and Environment an Ozone Cell specifically entrusted with the responsibility of coordinating and implementing all activities concerned with phase out under the Protocol. A project proposal for this institutional strengthening is presented in Annexure 2.2, with a request for funding from the Multilateral Fund.

3.2.2 Projects

The projects which have been tentatively identified under the programme for phase out are listed below:

1. Project for conversion of production facility for domestic refrigerators and freezers to use HFC-134a instead of CFC-12: **Project CON-1.**
2. Project for training 'trainers' in the airconditioning and refrigeration sector in better maintenance practices and building training infrastructure in servicing of equipment based on HFC-134a etc: **Project TRN-1.**
3. Projects for retrofitting of Industrial Refrigeration equipment to use non-ODS alternatives: **Project RET-1.**
4. Project for equipping service agencies with recovery and recycling equipment to be used in servicing of mobile air conditioners and other industrial refrigeration units: **Project REC-1**

Project CON - 1 Conversion

This project will be implemented by M/s. Wintech Ltd., the sole manufacturer (assembler) of domestic refrigerators in St. Lucia.

The company assembles refrigerators and freezers from imported sub-assemblies which are then charged with refrigerant, tested and marketed. The brands assembled by the company include Whirlpool and Ariston.

Hitherto the company has been assembling refrigerators and freezers which use CFC-12 as a refrigerant. In keeping with the objectives of the Government of St. Lucia to phase out the use of ODS at the earliest, the company wishes to switch over its entire assembly to equipment based on the non-ODS substitute HFC-134a.

The company's suppliers have also commenced production of refrigerators based on HFC-134a at many of the plants world wide and are willing to supply WINTECH with the sub assemblies to assemble and sell HFC-134a based refridgerators in St. Lucia.

Accordingly the company wishes to modify its assembly line to assemble equipment based on HFC-134a.

The project will involve modifications to the filling stations and installation of testing equipment in the assembly line.

The work on the project will commence in April 1995. Technical knowhow is being provided by Whirlpool Corporation Ltd., USA and Orcomm Lisbeth Music Nachfolger, Germany.

The project when implemented is likely to effect a reduction in consumption of CFC-12 from 0.5 MT per annum (at present) to nil. It will further result in a reduction of demand for CFC-12 for recharge of refrigerators in future which will be 0.1 MT per annum.

The incremental cost of the project based on capital costs and incremented operating costs net of benefits will be approximately US\$ 80,000. This will be reviewed against the recommended cost effectiveness threshold values at the time of project proposal submission.

The company has submitted a preliminary proposal to the Ministry of Planning and Environment and will be following it up with a detailed proposal.

Project TRN-1 Training

Sector: Refrigeration and Airconditioning

Purpose and nature of the project.

The major use of ODSs in St. Lucia is in the refrigeration and airconditioning sector primarily for servicing, which involves recharging of a wide range of equipment. Most of this servicing is undertaken by a large number of 'small' service agencies and by a few large service agencies.

The institution that trains the majority of servicemen in the sector is the Sir Arthur Lewis Community College which offers courses in Airconditioning and Refrigeration as well as Automotive maintenance.

The phase out of ODS in Saint Lucia will involve a change over in equipment from those based on CFC-12 to HFC-134a. This will predominantly take place in domestic refrigerators, mobile airconditioning and commercial and industrial refrigeration.

Based on the survey conducted during the Country Programme preparation it is believed that the most of the service technicians:-

- Require training on better practices in handling/recovering CFC refrigerants
- Need to be trained to use/handle alternative substances particularly with regard to understanding the differences in design, use and servicing of CFC based equipment and equipment based on HFC-134a.

To address the above two needs it is thought appropriate to have a project for training 'trainers'. This would involve training the instructors in the Community College in the areas identified above and providing them with requisite test facilities and equipment for demonstration.

These instructors, once trained would then be expected to enable the College to offer training programmes to all working service technicians.

The project would commence in 1996.

One expert in the field from overseas would be required to impart the training. In addition the required test equipment and demonstration kits would have to be imported.

Once completed, the project would help through better practices in savings in ODS consumption for recharging in all sectors to the extent of 10%, on a recurring basis. It would have the added benefit of training people in the use of better practices even while using the ODS substitutes.

The incremental cost of the project has been very roughly estimated as US\$ 40,000. This figure will be reviewed once a detailed itemised budget is prepared with the project proposal.

Representatives of service agencies as well as the Community College have expressed their need and interest in the above project.

A detailed project proposal will be prepared and forwarded by the Ministry of Planning Development and Environment.

Project RET-1 Retrofitting

Sector: Refrigeration and Airconditioning

Purpose and nature of the project

A significant proportion of the use of ODS in St. Lucia in the refrigeration and airconditioning sector is in the subsector of industrial refrigeration, covering cold rooms, freezers and ice machines and a small proportion of use in the commercial refrigeration sector in display cabinets. There are about 200 such units in St. Lucia.

Many of these equipment have a long life span and it would be expensive to replace the entire stock before the end of their useful life as may be necessary a few years hence if there is difficulty in obtaining ODS to maintain them. A more cost effective option would be to retrofit such equipment to use ozone friendly substances. Recent literature from UNEP suggests that there are many case examples of retrofits involving very marginal investments.

In Saint Lucia it is expected that many hotels, some supermarkets and institutions like the Fish Marketing Corporation and the Dairy etc. would submit proposals for retrofit of equipment. It is envisaged that the Government, through the ozone cell would initiate an awareness programme for these subsectors and collect inputs at enterprise or installation level to draw up a 'Refrigerant Management Plan' and to identify projects eligible for funding under the MFS guidelines.

These projects would probably commence in 1998. The exact timing would depend on the unit's specific commercial and technical considerations.

The know how for the retrofit could be sourced from within St.Lucia or may be from equipment suppliers abroad.

By progressive retrofitting it is assumed that there will be reduction in total ODS consumption of almost 17.73 MT on a recurring basis beginning 1998.

The incremental costs of these projects in total are estimated to at about US\$ 400,000. This is however tentative and would depend on actual costs of retrofit at each site.

Detailed project proposals will be forwarded by the Ozone Cell.

Project REC-1 Recovery and Recycling

Sector: Refrigeration and Airconditioning

Purpose and Nature of the Project

Among the uses of CFC-12 in St. Lucia a major application is recharging of mobile airconditioners which accounts for 37.2 % of the consumption. Industrial refrigeration which comprises refrigeration units in walk in coolers, freezers and ice machines accounts for 26 % of consumption of ODS in recharging. Many of these are based on CFC-12 and R-502. (Approx 87 %).

During the formulation of the Country Programme it was expressed by some representatives of the Industry (large service agencies) that there was ample scope for reducing ODS consumption in these two application areas with the use of appropriate recovery and recycling equipment.

Our preliminary analysis suggests that one centre with a recovery cum recycling machine supported by a few agencies with 'recovery only' type machines would be a viable proposition for St. Lucia.

While a detailed project proposal is to be worked out it is expected that 2 or 3 service agencies will submit project proposals for installing a composite recovery and recycling system while few others may submit proposals for installing 'recovery only' machines which will cater to the MAC subsector as well as industrial units.

The implementation of such a project could begin in 1996.

It is expected that the recovery and recycling equipment would be imported from outside the country.

The amount of savings possible based on preliminary estimates would be roughly 1.5 MT of ODS on a recurring basis.

The incremental cost of the project would be the capital cost of equipment and operating cost of operators, consumables etc. and would be of the order of US\$ 25,000 for the cluster of units.

The detailed proposal will be forwarded through the Ministry of Planning Development & Environment.

3.3

ROLES IN IMPLEMENTING THE STRATEGY

The 'Ozone Cell' proposed to be established within the Ministry of Planning development and Environment is the lead agency that will take the responsibility for implementation of the Country Programme.

Some of the other organisations also expected to contribute to the implementation of the strategy are:

- The Ministry of Finance which oversees the Customs and Statistics departments
- The Ministry of Trade which is the ministry dealing with import policy and imposition of restrictions on imports of specific items through the Price Control Department, and the Bureau of Standards within the ministry, in respect of labelling of products and equipment
- The Sir Arthur Lewis Community College which will implement projects in training and certification
- The Hotel and Tourism Association which would keep its members informed on the Protocol, its implications and coordinate where necessary in respect of project proposals forwarded to the ozone cell for retrofit of equipment

- The Saint Lucia Industrial and Small Business Association and the Saint Lucia Chamber of Commerce, Industry and Agriculture will interact with members on phase out strategies in the sectors concerned and liaise with the ozone cell.

- National Commercial Bank of Saint Lucia Ltd.

This is the bank that would handle funding from the Multilateral Fund within the country through an account specified by the Government of St. Lucia called 'Montreal Protocol Fund'.

Other agencies and organisations would also be involved in implementing the phase out strategy but to a lesser extent and they are not listed individually.

TIMETABLE AND CONSUMPTION IMPLICATIONS

Exhibits 3.4 (a) shows the timing of various actions for phase out and the cumulative savings in each sector over the phase out period.

Exhibit 3.4(a)

TIMING OF ACTIONS			
SUB-SECTOR	PROPOSED ACTION	PROPOSED DATE OF ACTION	SAVINGS OF ODS UPTO 2010 (MT)
DOMESTIC REFRIGERATION.	* Local assembly of refrigerators to switch to HFC-134a.	01/01/96	9.550
		01/01/97	30.230
INDUSTRIAL REFRIGERATION.	* Import of CFC-12 based refrigerators to be stopped.		
	* Restrict of import of all industrial refrigeration equipment based on ODS.	01/01/97	2.067
		01/01/98	21.624
	* Initiation of retrofitting Industrial refrigeration equipment with ODS free technology.	01/01/98	2.572
MOBILE A/Cs	* Recovery and recycling of CFC-12 and R-502.		
	* Restrict imports of cars with CFC-12 based A/Cs.	01/01/96	5.774
	* Recovery and recycling of CFC-12.	01/01/98	5.876
COMMERCIAL REFRIGERATION.	* Ban on imports of commercial refrigeration equipment using ODSS.	01/07/96	0.391
		01/01/98	0.119
	* Initiation of retrofitting comm. ref. equipment with ODS free technology.		
ALL SUB-SECTORS OF REF. AND A/C.	* Training service staff for reducing wastage through better practices.	01/07/96	2.49

Figure 3.1 and 3.2 show in graphical form, for the two groups of ODSs consumed in St.Lucia,

- The total forecast consumption in Tonnes ODP
- The total planned consumption and
- The Protocol limits on consumption.

Figure 3.1 illustrates that a combination of two or three factors, firstly the early introduction of equipment based on substitutes, the relatively short life of equipment like domestic refrigerators and mobile a/cs in St.Lucia and use of retrofitting as well as recovery and recycling help achieve a phase out in which the extended requirement of ODS for servicing equipment is minimised. Consequently, because there are very few equipment based on ODS still in service after substantial phase out in 2003, the cost associated with premature retirement of such equipment is virtually minimised if not eliminated.

The incremental costs to St. Lucia would therefore be largely in the Government and user sectors.

On the basis of the Action Plan the total incremental cost may be estimated to be around US\$ 620,000 to US\$ 700,000.

Table 3.4 gives for each Group of substances.

- i) Actual consumption in 1993
- ii) Planned consumption to phase out
- iii) Year of phase out.

Table 3.4

Group	Actual consumption 1993 (MT)	Planned consumption Phaseout(MT)	Year of phase out
Annexure A, Group I	7.210	55.587	2008
Annexure A, Group II	0.200	0.200	1995

3.5

Budget and Financing Programme

The net costs to be incurred by the Government in implementing the Action Plan will mainly arise from

1. Cost of administration
2. Costs of publicity
3. Costs of training
4. Loss in Tax revenues from duty concessions.

Table 3.5 indicates the costs which the Government may be estimated to incur each year till phase out and the expected funding from the Multilateral Fund.

Table 3.5
Costs to be incurred by Government and means of Financing

(Figure in US \$)							
Item of Cost	1995	1996	1997	1998	1999	2000	2001-10
Institutional Strengthening	30300	24200	22400	-	-	-	-
Public Awareness	10000	10000	5000	5000	-	-	-
Training	-	10000	5000	5000	4000	2000	-
Duty Concessions*	15000	10000	10000	10000	-	-	-
Total	55300	54200	42400	20000	4000	2000	Nil
To be financed by Multilateral Fund	30300	24200	22400	-	-	-	-
To be incurred by the Government	25000	30000	20000	20000	4000	2000	-
Total	55300	54200	42400	20000	4000	2000	Nil

* Possible concessions on equipment for projects such as recovery and recycling and other capital equipment for training, conversion etc.

3.5.1 Project Funding Priorities

While a number of projects may be forthcoming for assistance as described in Section 3.2.1, the details of these are to be worked out. The project that is most likely to be presented for immediate assistance (other than the Institutional Strengthening Project) is one for conversion of the Domestic Refrigerator manufacturing facility to use HFC-134a.

Salient particulars are provided as under:

Company: Wintech Ltd.

Description and Purpose of the Project

To convert the assembly line of their manufacturing facility for refrigerators and deep freezers to use HFC-134a instead of CFC-12 and to provide requisite training and testing inputs for the same.

Start year 1995

Approximate amount of
assistance to be sought: US\$ 80,000

The project has not yet been agreed with an executing agency.

Reduction in ODS - Approx 0.5 MT per annum
recurring

3.6 Monitoring Arrangements

Since St. Lucia is a small country and the total consumption of ODSs is limited and since there are few importers of these substances, the monitoring of consumption could be carried out fairly efficiently by recording imports.

Since it is proposed to license import of ODSs this would enable

- i) to ascertain who the importers are, and
- ii) to monitor imports through customs records.

For the first two years the Ozone Cell in the Ministry of Planning Development & Environment will coordinate this exercise after which a routine procedure would be institutionalised.

In the case of St. Lucia, the Protocol limits would be based on the average consumption of 1995, 1996 and 1997. This would be monitored by the Ozone Cell. Most of the projects are also scheduled to commence on or before 1998. Thus it is expected that the proposals for these would have been cleared before 1997.

In fact, it may be expected that the success of the first few projects may well accelerate the phase out process.

The implementation of these projects till 1997 will be overseen by the Ozone Cell after which there will be a specific position in the Ministry of Planning, Development & Environment which will monitor progress on projects.

Exhibit - 2.1

Consumption of Annex A ODSs in Saint Lucia in 1986

Substance	Imports (1986)	
	Consumption (MT)	ODP (in Tonnes)
Annex A Group I		
CFC - 11	0.136	0.136
CFC - 12	5.109	5.109
R - 502	1.212	0.412
Sub Total		5.657
Annex A Group II		
Halon 1211	0.10	0.3
Halon 1301	0.15	1.5
Sub Total	0.25	1.8
Total		7.457
Note: This data has been collected to assist in reporting under Article 7.		

List of Respondents

Sector	Name of the Respondent
Domestic/Commercial Refrigeration	
- Assembler	* Wintech Ltd.
- Importers	* Winmark Ltd. * Court St. Lucia * Coral St. Lucia * Ray's Refrigeration Service Ltd. * J.Q. Charles Ltd. * Lorde's Refrigeration and A/C Service Ltd. * Muff's Refrigeration Co. Ltd. * Mars Ltd.
Industrial Refrigeration - Importers	* J. Q. Charles Ltd. * Lorde's Refrigeration & A/C Services Ltd. * Muff's Refrigeration Co. Ltd. * Mars Ltd.
Automobile Importers	* Sunset Motors Ltd. * Northwest Ltd. * The Roserie Co. Ltd. * Multi Service Ltd. * Beechcomber Ltd. * J. Q. Charles Ltd.
Fire Fighting Equipment	* Windward Island Gases Ltd. * Cable and Wireless
Importers of ODS	* Cable and Wireless * Muff's Refrigeration Co. Ltd. * Ray's Refrigeration Services Ltd. * Mars Ltd. * Lorde's Refrigeration & A/C Services Ltd.
Service Agencies	About 35 service agencies were also approached for their valuable inputs.

PROJECT PROPOSAL FOR INSTITUTIONAL STRENGTHENING

Project Title: Establishment of an Ozone Cell

Sectors Covered: All

ODS Consumption:-

Project Duration: 3 Years

Total Incremental Cost: US \$ 76,900

IMPLEMENTING AGENCY UNEP

National Coordinating Agency: Ministry of Planning,
Development and Environment

PROJECT SUMMARY

The Ministry of Planning, Development and Environment has been looking after all the activities relating to compliance with the Protocol since St. Lucia became a signatory. With the formulation of the Country Programme and the identification of various activities required to be coordinated at a central point there is a need to build up institutional capability within the Environment Section to manage these activities. This project is concerned with establishment of this capability.

PROJECT DESCRIPTION

The Ministry of Planning, Development and Environmental is the department of the Government that will be implementing the Country Programme.

Hitherto the work connected with the Protocol and Country Programme activities have been looked after by the Environmental Section in the above Ministry. The Environmental section looks after a multitude of matters including those relating to Energy and Technology and other environmental issues.

The Country Programme envisages a number of activities to be coordinated and completed within the next 2-3 years which could require full time attention and support at least for the first two years.

These cover:

- Acting as the nodal resource point for all Protocol related matters.
- Coordinating the formulation and submission of project proposals under the Country Programme for funding.
- Interministerial and inter-departmental coordination for implementing administrative measures.
- Information gathering and dissemination on Ozone related issues in terms of public awareness and education.
- Monitoring consumption of ODS and reporting to the Protocol Secretariat under Article 7.
- Regional coordination and collaboration to ensure that regulations and policies are consistent with existing Regional Trade Agreements.
- Submitting to the Executive Committee a Progress Report on the implementation of the Country Programme on a yearly basis, following the format approved by the Committee (UNEP/OzL.Pro/ExCom/13/47 Annex II).

It would be therefore necessary to have a person dedicated to this activity with requisite secretarial support.

It is proposed that a cell be created within the Environment Section with an Ozone Officer in charge. This person would have the

support of a secretary/research assistant.

While it is envisaged that the office space and amenities would be provided by the Ministry, the cell would require infrastructure and a budget to carry out its activities.

The infrastructure would be in terms of a computer system, a photocopier, a typewriter, an overhead projector and a FAX machine. The budget would cover expenses on activities mentioned earlier and would include

- Manpower costs
- Operating costs including
 - Stationary and supplies
 - Conferences and meetings
 - Publicity materials.

The proposed budget is presented in the Exhibit alongside.

Project Time Frame

Technically the project life is till complete phase out is achieved in St, Lucia. However, it may be presumed that much of the activity will take place over the next 18-24 months.

Incremental Costs

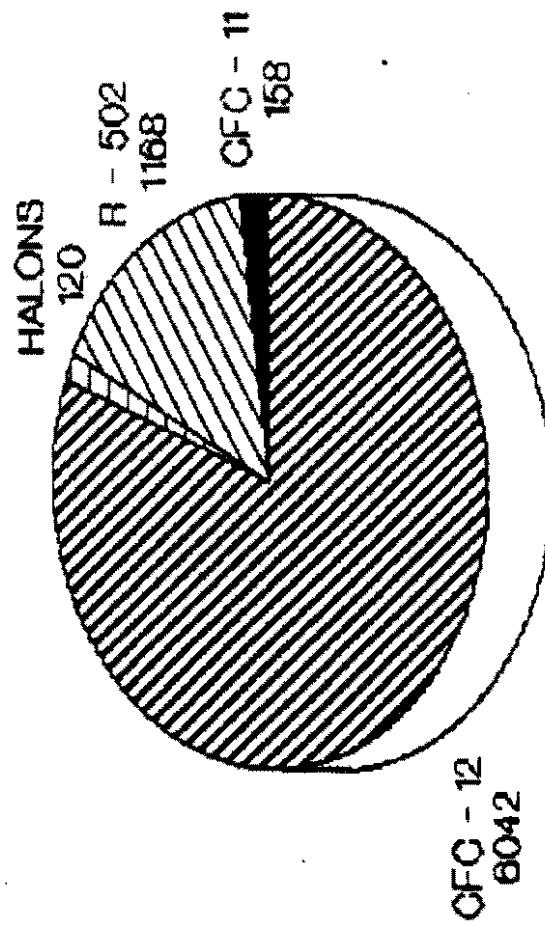
All the costs indicated above may be considered as incremental costs and eligible for funding by the Multilateral Fund.

Exhibit 3.5**Budget for Institutional Strengthening Project**
(Figures in US \$)

Item	Year		
	1995	1996	1997
Personnel costs			
Ozone Officer	10000	20000	20000
Infrastructure			
Computer, printer and software	6300	-	-
Photocopier	7500	-	-
Overhead Projector	800	-	-
Typewriter	1500	-	-
Accessories (furniture)	700		
Operating Costs			
Office Supplier and Stationery	1000	1000	500
Publicity Material	500	1000	-
Meetings and Seminars	800	1000	700
Equipment maintenance charges	1200	1200	1200
Total	30300	24200	22400
Grand Total			76900

ODS CONSUMPTION IN ST.LUCIA IN 1993 [BY TYPE OF ODS]

FIG. 1.1



FIGURES IN ODS KGS.

ODS CONSUMPTION IN ST.LUCIA IN 1993 BY END USE

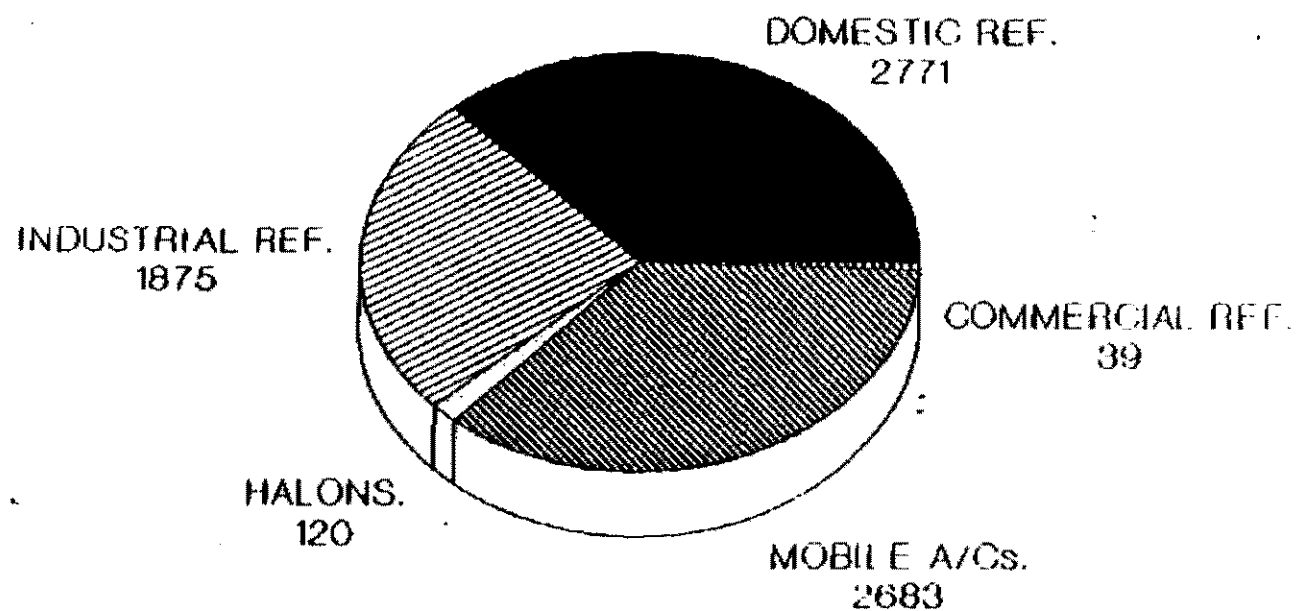


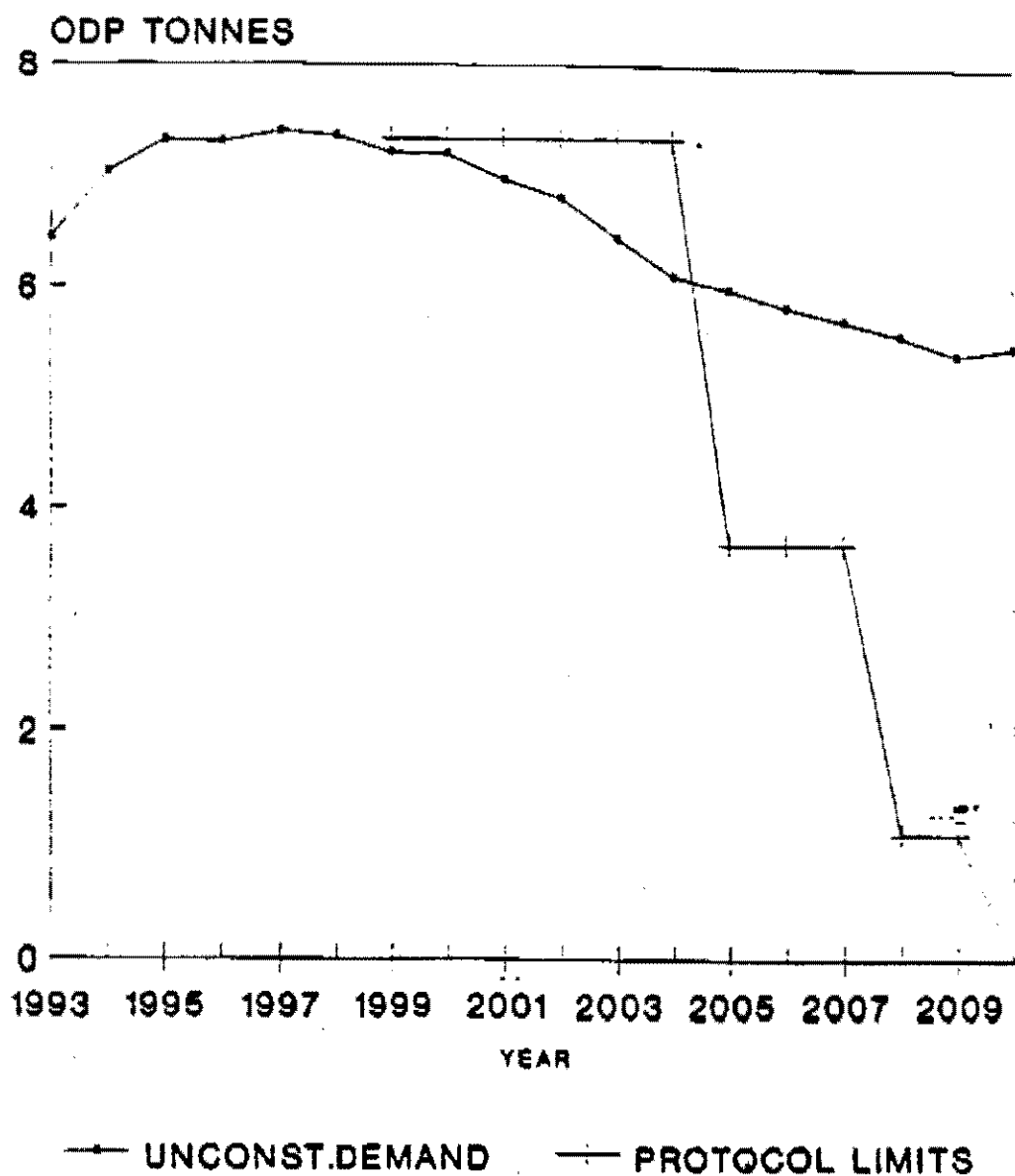
FIG. 1.2

FIGURES IN ODS KGS.

FORECAST CONSUMPTION

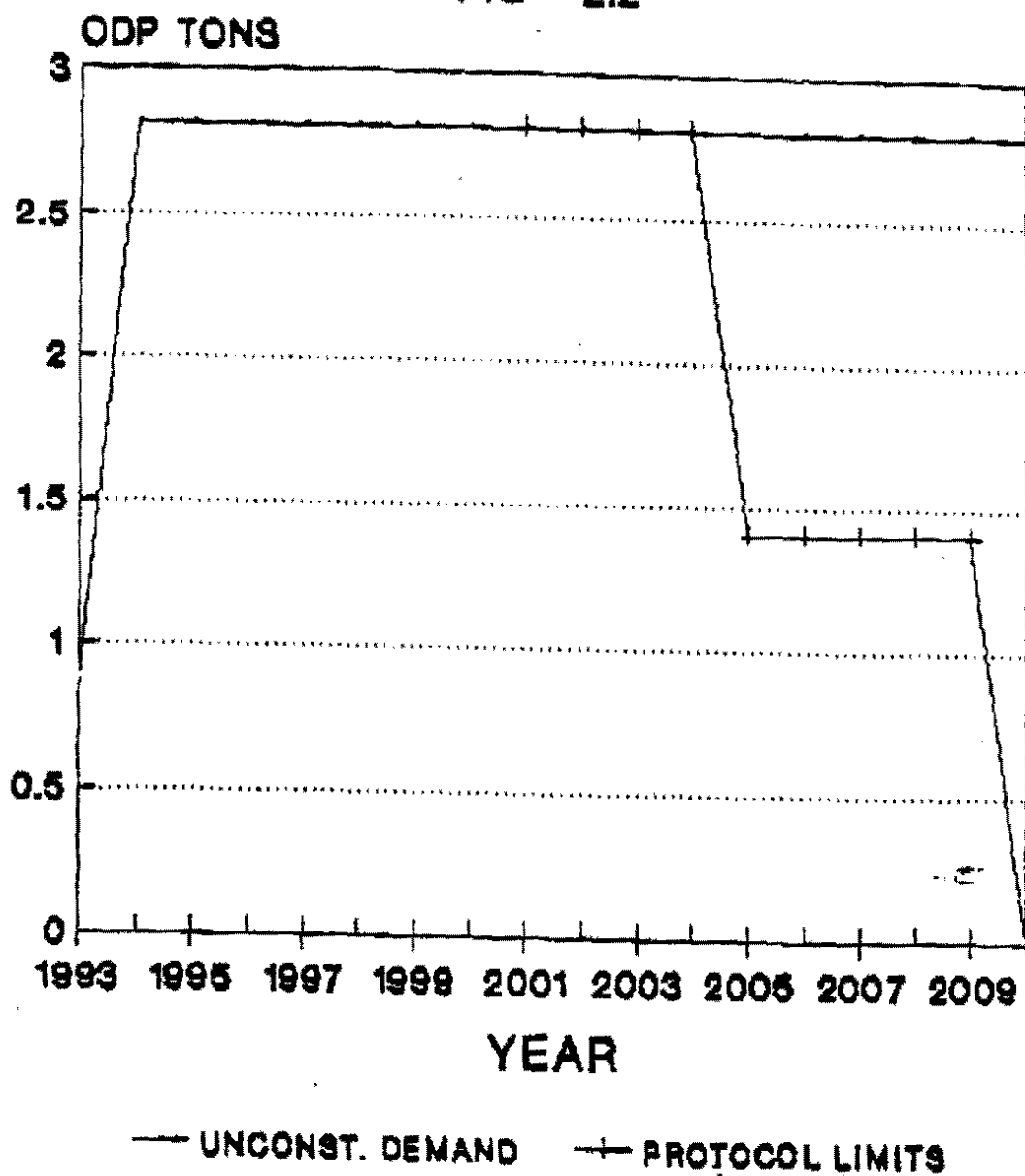
CFCs IN ANNEXE A : GROUP I

FIGURE - 2.1



FORECAST CONSUMPTION HALONS IN ANNEX A : GROUP II

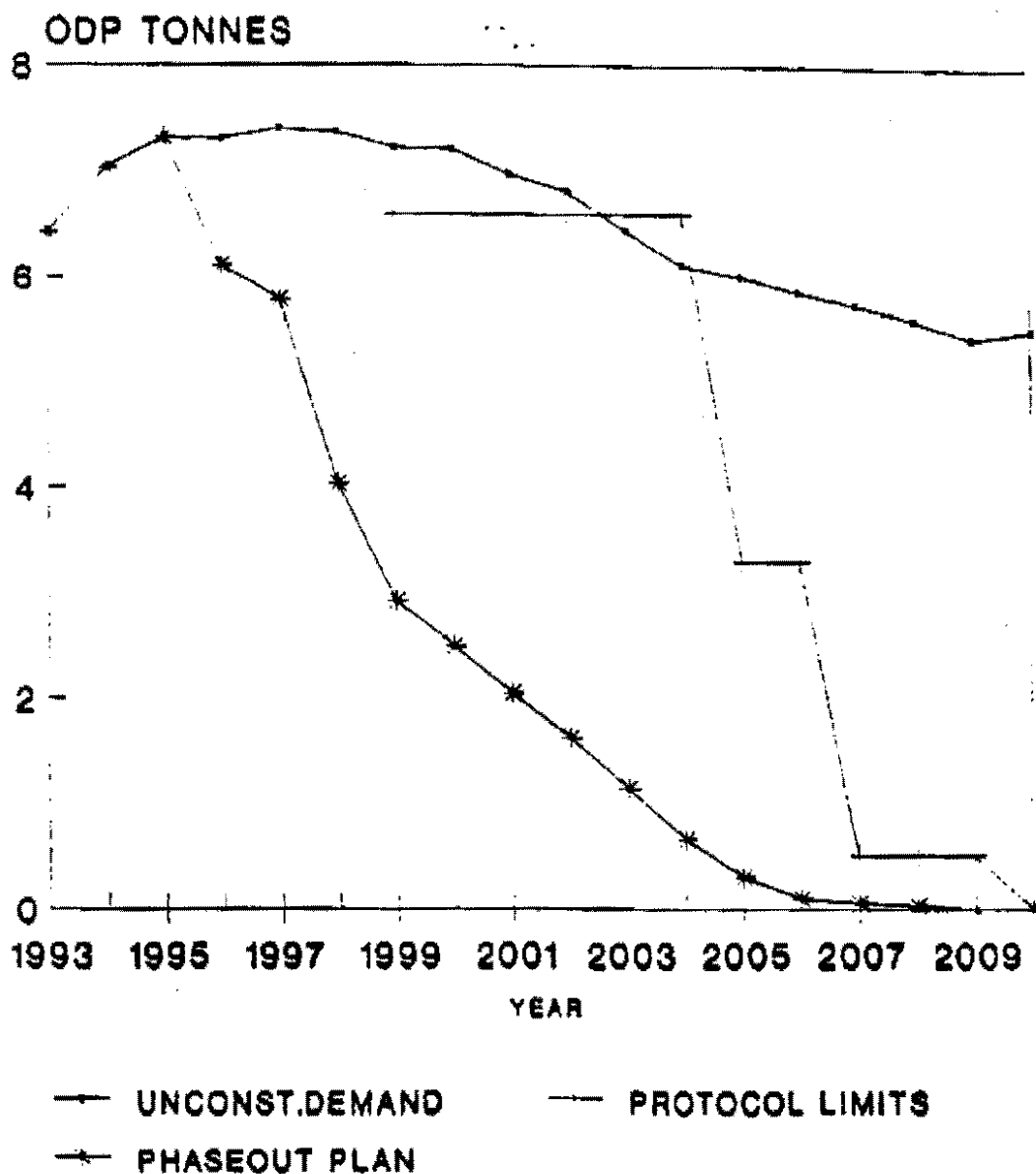
FIG - 2.2



PROTOCOL PHASE-OUT PROFILE

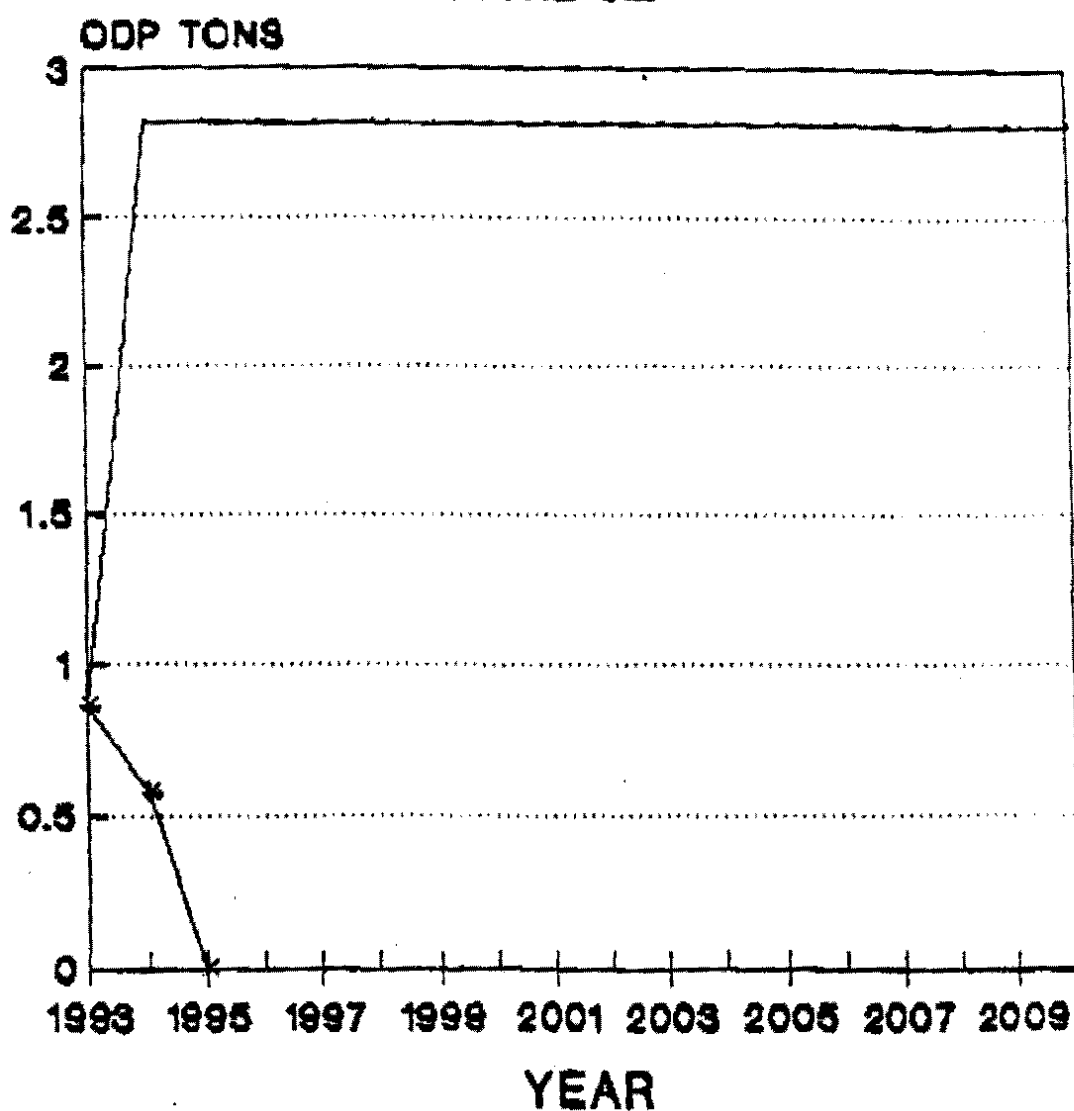
CFCs IN ANNEXE A : GROUP I

FIGURE - 3.1



PROTOCOL PHASE-OUT PROFILE HALONS IN ANNEX A : GROUP II

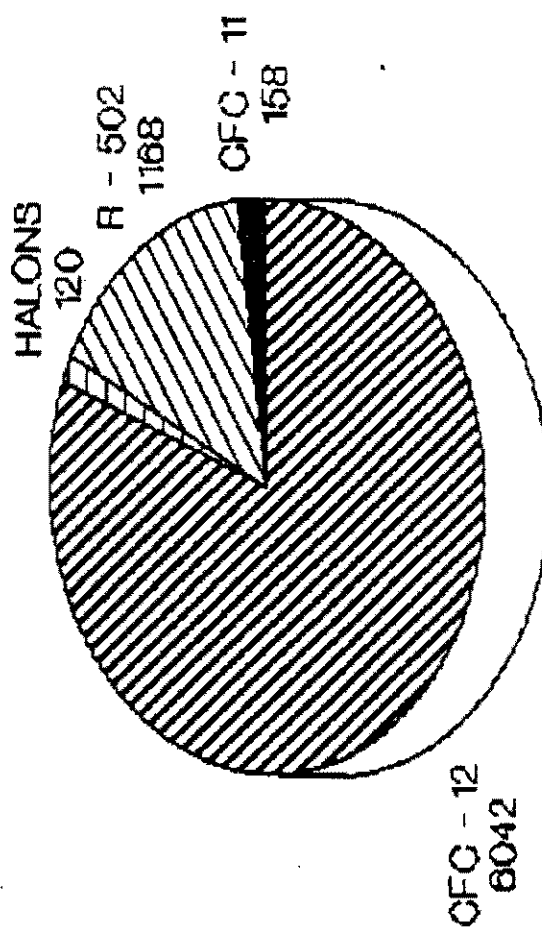
FIGURE 3.2



— UNCONSTRAINED DEMAND * PHASE OUT

ODS CONSUMPTION IN ST.LUCIA IN 1993 [BY TYPE OF ODS]

FIG. 1.1



FIGURES IN ODS KGS.

ODS CONSUMPTION IN ST.LUCIA IN 1993 BY END USE

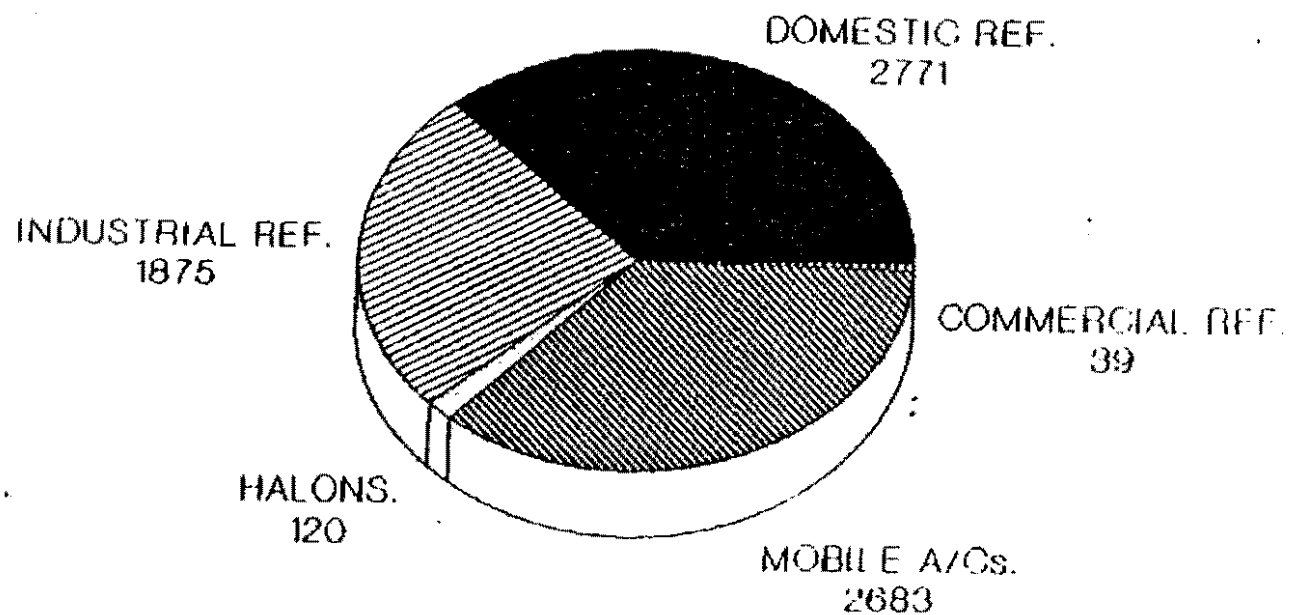


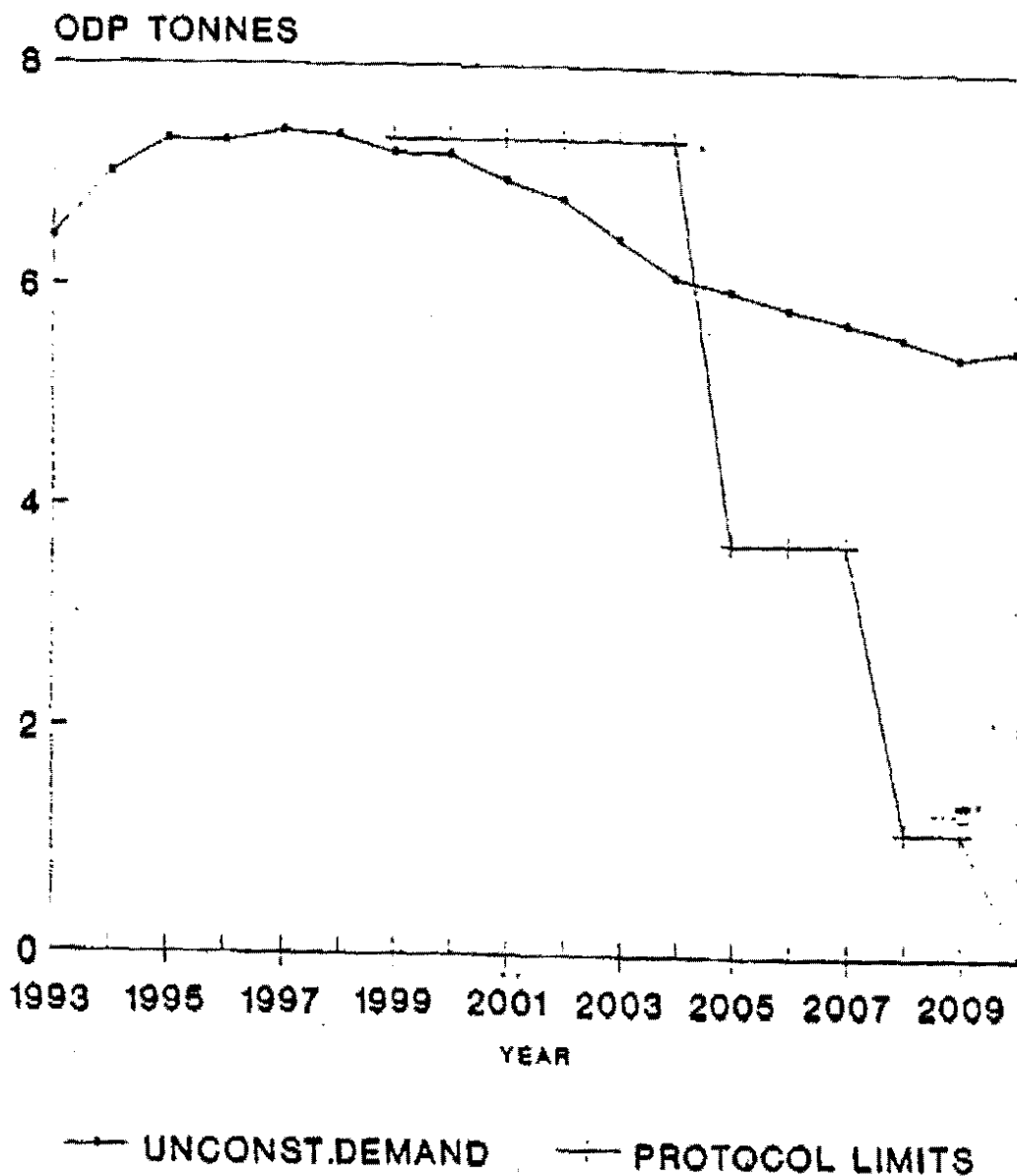
FIG. 1.2

FIGURES IN ODS KGS.

FORECAST CONSUMPTION

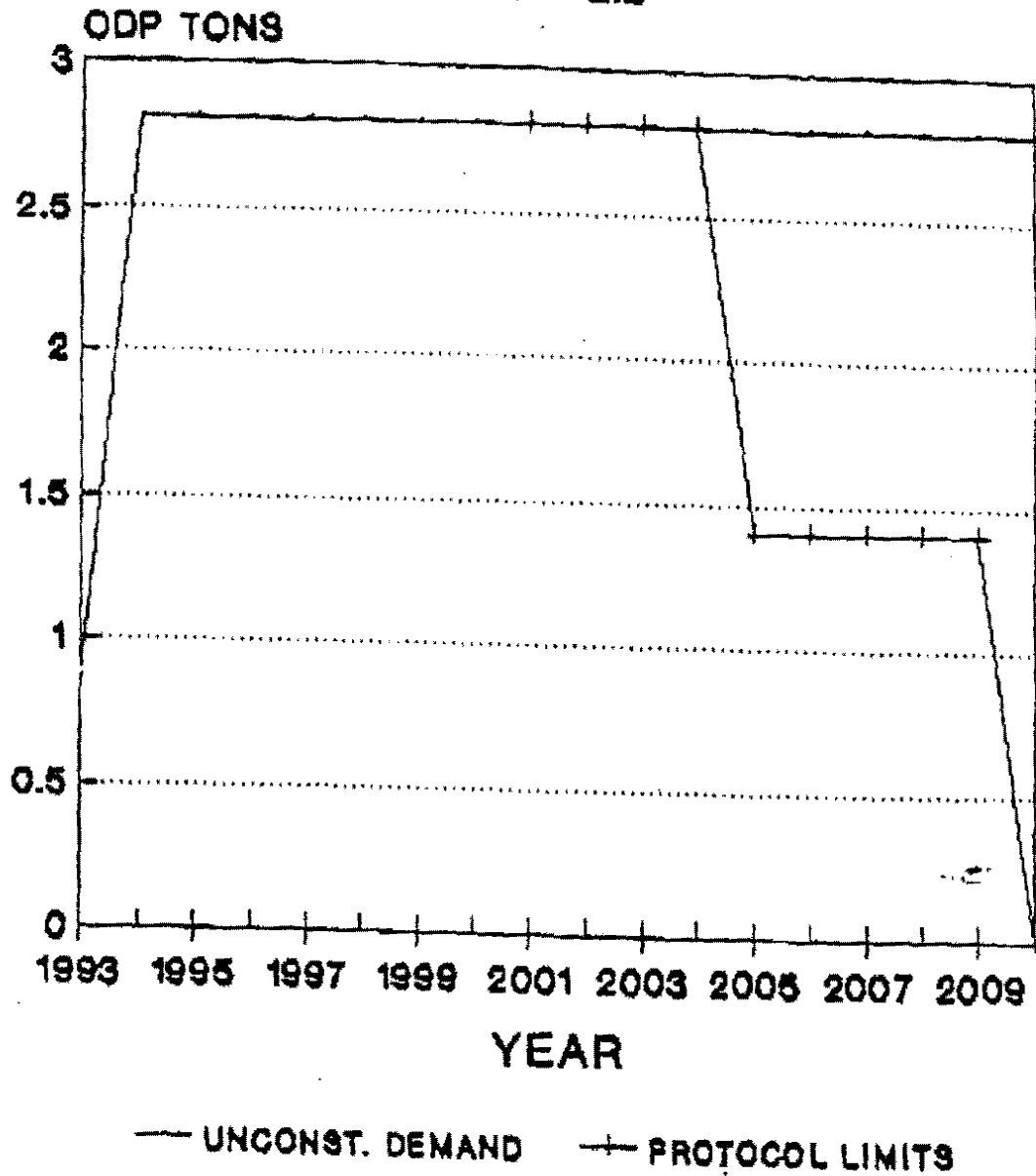
CFCs IN ANNEXE A : GROUP I

FIGURE - 2.1



FORECAST CONSUMPTION HALONS IN ANNEX A : GROUP II

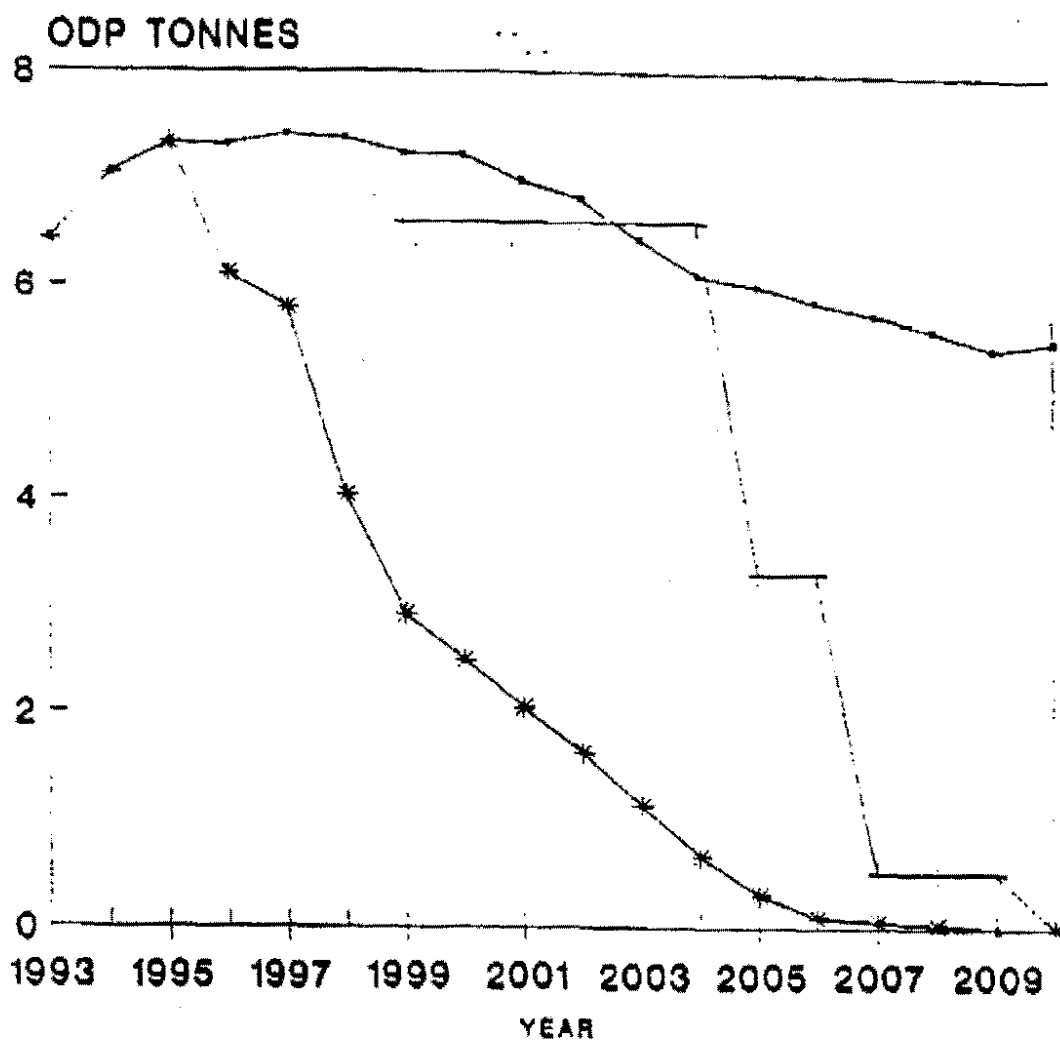
FIG - 2.2



PROTOCOL PHASE-OUT PROFILE

CFCs IN ANNEXE A : GROUP I

FIGURE - 3.1



UNCONST.DEMAND

PROTOCOL LIMITS

PHASEOUT PLAN

PROTOCOL PHASE-OUT PROFILE HALONS IN ANNEX A : GROUP II

FIGURE 3.2

