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Multilateral Fund for the
Implementation of the Montreal Protocol

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COUNTRY PROGRAMME: URUGUAY

This document consists of:

- a) Country Programme Executive Summary;
- b) Country Programme Evaluation Sheet (prepared by the Fund Secretariat);
- c) Country Programme Cover Sheet (prepared by the Fund Secretariat);
- d) Transmittal Letter from the Government of Uruguay.

URUGUAY COUNTRY PROGRAMME EVALUATION SHEET

The Uruguay Country Programme was revised in accordance with the "Procedures for Presentation of Country Programmes and Project Proposals to the Executive Committee" (UNEP/OzL.Pro/ExCom/5/5/Rev.2). It consists of:

- Letter of transmittal from the Government of Uruguay;
- Country Programme Cover Sheet;
- Executive Summary;
- ODS consumption, forecast demand for ODS, industrial infrastructure, institutional and policy frameworks;
- National strategy, action plan and project proposals;
- Implementation of the first phase of the country programme (1993-1996) through:
 - i) institutional strengthening, and
 - ii) specific projects in the industrial sector.

Uruguay does not produce controlled substances. Between 1986 and 1990, the country's annual consumption of CFC (mainly CFC-11 and CFC-12) was 369.6 tonnes. While in 1986 Uruguay consumed 6.4 tonnes of halons, in 1991 it only consumed 2.0 tonnes. In 1992, the amount of ODS consumed was estimated at 316.6 tonnes. Of this amount, 305.2 tonnes were CFC, 1.1 tonnes halons, 5.3 tonnes carbon tetrachloride and 5.0 tonnes trichloroethane. Between 1990 and 1992, an average of 4.6 tonnes of methyl bromide were consumed.

Distribution of ODS per sector, in 1992, was estimated as follows:

- 53.1 per cent in the refrigerator sector (of which 45.2 per cent was for maintenance of refrigeration equipment);
- 33.5 per cent in the foam sector (rigid and flexible foams);
- 7.3 per cent in aerosols, mainly in medicines and cosmetic products;
- 4.3 per cent in the solvent sector;
- 0.3 per cent for fire extinguishers; and
- 1.5 per cent in other uses (cleaning).

The larger CFC consumer industries in Uruguay are aware of the commitment of the Government to comply with the Montreal Protocol. These industries include:

- Divino, S.A., a mattress manufacturing industry, with 80 per cent of the total market;
- Metalizadora Uruguay, production of insulating material for the construction industry, with 50 per cent of the total market;
- Indunor, which produces 20,000 refrigerator units (about 50 per cent of the market), and Topsy, with 30 per cent of the commercial refrigeration market;

- Replast, S.A., Frielectric, and Indunor, the three largest shops for servicing and maintenance of domestic, industrial and commercial refrigerators; and
- Sinfax, with 96 and 20 per cent of bus and automobile air conditioning, respectively.

The Government of Uruguay proposes to eliminate 30 per cent of its ODS consumption between 1993 and 1996, by implementing training programmes for servicing technicians in the refrigerator sector; training programme in the foam sector and replacement of CFC-11 with methylene chloride in the production of flexible foams; and training in the replacement of ozone depleting solvents. The remaining 70 per cent of ODS consumed, will be phased-out by the year 2010.

The Government's action plan is based on the following six actions:

1. Creation of the Governmental Ozone Commission (COGO) and its Consultative Committee;
2. Development of a certification "ozone seal";
3. Establishment of an education and awareness programme;
4. Development of technical programmes by sector (i.e., training, recycling);
5. Establishment of an appropriate regulatory framework to strengthen the actions proposed in its country programme; and
6. Creation of a Financing Programme for Technology Conversion (mid-term).

The principal government agencies responsible for the implementation of the Montreal Protocol are the Ministry of Housing, Territorial Ordering and its execution agency, the National Directorate of the Environment. UNDP is designated as the implementing agency for the country programme.

The implementation of the first phase of the action plan is based on the following projects, at a total estimated incremental cost of US \$409,950:

1. Institutional strengthening (US \$273,000):
 - Establishment of the Governmental Ozone Commission, COGO;
 - Development of regulatory measures;
 - Public awareness programme;
 - Development of the ozone seal; and
 - International technical assistance.
2. Industrial projects (US \$136,950):

- Training programme for CFC reduction in the manufacturing of flexible foams;
- Technical assistance for CFC replacement in the manufacturing of rigid foams;
- Conversion to hydrocarbon propellants (aerosols);
- Recovery in the recharge of fire extinguishers;
- Recovery in the recharge of domestic and commercial refrigerators;
- Conversion of industrial refrigeration processes;
- Recovery during installation, revision and recharge of air conditioning units;
- Feasibility study for the Financial Programme for Technology Conversion; and
- Conversion of CFC-114, carbon tetrachloride and methyl chloroform (solvents).

COGO, responsible for the implementation of the country programme, will provide technical assistance to the Government in all issues related to the Montreal Protocol; will co-ordinate the implementation of the activities proposed in the action plan; will propose necessary changes in the legislation; will provide technical assistance to the Ministries related to the Montreal Protocol; and will encourage signing of agreements among industries.

The other elements of the institutional strengthening are preparation of regulatory measures to comply with the obligations of the Montreal Protocol; development of an ozone seal for labelling ozone friendly products; and an education and awareness campaign, which will instruct the public on the threats to human health and the environment due to the ozone layer depletion.

Recommendations

The following recommendations are made for the consideration of the Executive Committee:

1. Approval of the country programme;
2. Approval of funding level of US \$173,800 for the institutional strengthening programme, including the establishment of the Governmental Ozone Commission, COGO, development of regulatory measures, public awareness programme, and development of the ozone seal;
3. To request UNDP to collaborate with the Government of Uruguay to further develop the first phase projects and include them in its future work programme or work programme amendment.

COUNTRY PROGRAMME COVER SHEET

Country: Uruguay

Lead National Agency: Governmental Ozone Commission (COGO)

Participating Implementing Agencies: UNDP

Phase-out schedule

Substance	Current consumption (tons x ODP) in 1991	Planned cumulative consumption till phase- out (ton x ODP)		Planned year of phase-out	
		Article 5 schedule (1)	Accelerated schedule (2)	Article 5 schedule	Accelerated schedule
CFC-11	116.9 x 1.0 = 116.9	2,036.8	1,146.0	2010	2010
CFC-12	184.6 x 1.0 = 184.6	3,216.4	1,646.0	2010	2010
CFC-113	3.1 x 0.8 = 2.5	43.6	13.0	2010	2010
CFC-114	0.5 x 0.8 = 0.4	8.1	10.0	2010	2010
Halon 1211	1.1 x 3.0 = 3.3	61.5	17.0	2010	2010
CTC	5.3 x 1.1 = 5.8	108.7	42.0	2010	2010
MCF	5.0 x 0.1 = 0.5	9.3	3.0	2010	2010
TOTAL	313.6	5,475.1	2,874.0		

(1) Projected at an annual rate of 1.9 per cent through the year 2010.

(2) 30 per cent of ODSs will be phased out in 1993-1996. 30 per cent will be phased-out between 1996 and 2002, at a pace set by availability of technologies. The remaining 40 per cent will be phased-out between 2003 and 2010.

Government Action Plan

Year	Description of Action	Intended Effect	Sector	Agency	Estimated cost (US \$)			
					1993	1994	1995	Total
I. INSTITUTIONAL STRENGTHENING								
1993-1995	Establishment of the Governmental Ozone Commission (COGO)	Co-ordination, control, technical support	All	Govt.	37,000	27,000	27,000	91,000
1993-1994	Development of regulatory measures	Regulatory measures to comply with the obligations of the Montreal Protocol	All	COGO	13,200			13,200
1993-1995	Public awareness programme	Create awareness among the public on the impacts due to ozone layer depletion	All	COGO	41,000	23,000	23,000	87,000
1993-1995	Development of the ozone seal	Use of the ozone seal in products	All	COGO	22,000	11,000	8,800	41,800
1994-1995	International technical assistance	Technical assistance	All	COGO		20,000	20,000	40,000
	Sub-total cost				113,200	81,000	78,800	273,000
II. INDUSTRIAL SECTOR ACTIVITIES								
1993-1994	Training programme for CFC reduction in the manufacturing of flexible foams	Training (replacement of CFC with methylene chloride)	Foam	UNDP	22,000			22,000
1993-1994	Technical assistance for CFC replacement in manufacturing of rigid foam	Technical assistance. Training	Foam	UNDP	22,000			22,000
1993-1994	Conversion to hydrocarbon propellants	Training. Incentives to industry	Aerosol	UNDP	11,550			11,550
1993-1994	Recovery during recharge of fire extinguishers	Training	Halon	UNDP	11,550			11,550
1993-1994	Recovery during recharge of domestic and commercial refrigerators	Training	Refrigeration	UNDP	13,200			13,200
1993-1994	Conversion of industrial refrigeration processes	Training	Refrigeration	UNDP	15,950			15,950
1993-1994	Recovery during installation, revision and recharge of air conditioning units	Training	Refrigeration	UNDP	13,200			13,200
1993-1994	Feasibility study for the Financial Programme for Technology Conversion	Cost-benefit analysis to determine the feasibility of replacing or retrofitting air conditioning and refrigeration equipment	Refrigeration	UNDP	16,500			16,500
1993-1994	Conversion of CFC-113, CTC and MCF	Seminar	Solvent	UNDP	11,000			11,000
	Sub-total cost				136,950			136,950
TOTAL COST					250,150	81,000	78,800	409,950

Project Summary

Year	Type of Project	Project Description	Agency (1)	Project cost (US\$)
1993–1995	Institutional strengthening	Establishment of appropriate institutional framework, regulatory measures, education and awareness programme	UNDP COGO	233,000
1993–1994	Industrial projects	CFC recovery and recycling in refrigerator equipment; training in the foam, solvent, halon and aerosol sectors	COGO	136,950
1993–1994	International technical assistance	Technical assistance during implementation of the country programme		40,000
Total cost				409,950

(1) COGO: Governmental Ozone Commission

The Government of Uruguay proposes to eliminate 30% of its ODS consumption between 1993 and 1996. The remaining 70% of ODS consumed, will be phased-out by the year 2010.

MINISTRY OF HOUSING, DEVELOPMENT PLANNING AND THE ENVIRONMENT

Montevideo
May 7, 1993

Dr. Omar El-Arini
Chief Officer
Multilateral Fund Secretariat for the
Implementation of the Montreal Protocol

OF.156/93

As you are aware, Uruguay has been a party to the Montreal Protocol since passage of Law 16.157 on November 12, 1990. Our country is included under the provisions established in Article 5, paragraph 1, of said Protocol.

As the competent national authority regarding environmental matters, this Ministry is pleased to present you with an action plan designed to obtain technical and financial assistance from the Multilateral Fund via the "Country Program."

This implies a commitment on the part of Uruguay to carry out said program and to implement any necessary updating measures for the purpose of complying with the Montreal Protocol. Thus, a March 3, 1993, ministerial resolution created the Government Technical Commission for Ozone.

Consequently, I formally request that the Chief Officer kindly submit Uruguay's proposed action plan to the consideration of the Multilateral Fund's Executive Committee.

Sincerely,

Arq. MANUEL A. POMAY
MINISTER OF HOUSING,
DEVELOPMENT PLANNING AND
THE ENVIRONMENT

CC: SEÑOR VAN HANSWIJCK DE JONGE

URUGUAY

IMPLEMENTATION OF THE MONTREAL PROTOCOL

**NATIONAL PROGRAM FOR PHASING OUT
THE CONSUMPTION OF SUBSTANCES THAT
DEplete THE OZONE LAYER**

MINISTRY OF HOUSING, DEVELOPMENT PLANNING AND THE ENVIRONMENT

NATIONAL ENVIRONMENT DIVISION
SECRETARIAT OF GLOBAL ATMOSPHERE

Montevideo
March 1993

EXECUTIVE SUMMARY

The Government of Uruguay has a clear intention of complying with the Protocol Agreements and phasing out the consumption of substances that deplete the ozone layer (ODS).

The Government of Uruguay ratified the Vienna Convention on February 27, 1989, and the latter took effect on May 28, 1989. The Montreal Protocol was signed on January 8, 1991, and became effective on April 8, 1991.

Uruguay operates under the status of Article 5, paragraph 1. Therefore, it is eligible for funding from the Multilateral Fund for the Implementation of the Montreal Protocol.

The present document provides grounds for the US \$369,950 request for funding of the Program's first years (1993-1995). A 30% reduction is expected as a result of implementation of the Program's first stage. This reduction will equal approximately 95 metric tons.

Uruguay's Government supports a policy of economic development with the participation of private enterprise and the public sector.

In accordance with the Executive Committee's guidelines for the preparation of Country Programs, this document describes Uruguay's consumption of controlled substances, our best estimates of their use and the proposed program for gradual reduction and elimination of said consumption, all in compliance with the commitments acquired via the Protocol.

The year 1992 was used as a base. In that year Uruguay consumed 316.58 metric tons of ODS, the equivalent of 314.16 tons ODP.

If Uruguay had not signed the Montreal Protocol, projected consumption for the year 2010 would have been 444.24 metric tons, based on a 1.9% annual growth rate.

Of the total consumption for 1992, 36.9% were CFC-11, 58.3% were CFC-12, 1% CFC-113, 0.3% halons and 3.3% substances controlled under Annex B of the Protocol.

Uruguay produces none of the substances listed in Annex A of the Montreal Protocol, and its consumption requirements therefore correspond to its imports.

Uruguay has opted for a Program with governmental measures that are apt to affect supply and demand in the market of goods and inputs for which ODS are used. Some measures are intended to affect consumer behaviour (public education, ozone seal, etc.), whereas others are designed to act on the supply factor as a means to phase out ODS use (technical and financial assistance).

In other words, the country and Government will encourage private-sector initiatives aimed at implementing the Montreal Protocol, rather than leave management, organization and control of the above in the hands of a strong State ozone apparatus. This context and conception define the character of the Government Technical Commission for Ozone (COGO in Spanish).

To be successful in these programs, Uruguay will have to achieve the objective of decreasing ODS consumption by 30%, which is the goal set for the first stage.

The Uruguayan Government guides its economic policy on the basis of free-market principles, while granting significant responsibility to the public sector. This approach has been named economic growth with social justice. Major changes in this model are not expected.

The main subjects to be undertaken in the first three-year phase are:

- a) Consolidation of the conversion of propellants in the aerosol industry;
- b) Technological conversion to the use of methylene chloride or new short-term formulas in the production of flexible foam;
- c) Introduction of retrofitting and recycling technologies in refrigeration and air-conditioning maintenance;
- d) Conversion for non-essential uses of halons;
- e) Training and technical assistance in the areas of air conditioning and solvents;
- f) Pre-investment study regarding incremental costs for retrofitting in the areas of refrigeration and air conditioning.

In coherence with its economic policy, the present Government has decided to avoid leveling taxes on and/or setting quotas for the importation of substances that deplete the ozone layer. Instead, it will create incentives in order to encourage initiatives by the private sector. In this framework, we have prepared an Action Plan that is coherent with the economic policy objectives described above.

Furthermore, it is important to mention that Uruguay's relationship with its neighbours should be considered in the long-term technological retrofitting program. Therefore, we believe that it is important to establish mechanisms for creating projects in the MERCOSUR area (Argentina, Paraguay, Uruguay).

From 1986 to 1992, Uruguay used ODS primarily in refrigeration and air-conditioning maintenance, as well as in foams. Until 1991 aerosols were also a major area for ODS use.

Uruguay produces none of the ODS controlled under the Montreal Protocol.

The breakdown on usage in 1992 was the following:

Aerosols	23	tons
Refrigeration	18	tons
Solvents	15.4	tons
Air conditioning	2	tons
Extinguishers	1.1	tons
Foams	107	tons
Maintenance (refrig. and air cond.)	143	tons

The chief use of carbon tetrachloride is as a solvent. Methylchloroform has a similar use. Imports of these substances in 1992 amounted to 10 metric tons. Over the years their consumption rates have been erratic.

Data on imports and consumption (see Annex) were collected by the members of COGO via the Banco de la República, the Industrial and Technological Information Department of the Ministry of Industry and interviews with consumers.

Import figures are highly reliable, though they are affected by the fact that no broken-down customs codes existed until September 1991.

The 1992 data on imports are more reliable due to the breakdowns performed following the code changes published in the official gazette on September 2, 1991.

On the institutional level, Uruguay has an organization devoted to the environmental question: the Ministry of Housing, Development Planning and the Environment (MVOTMA), which was created under law number 16.112 on May 30, 1990. This ministry's executing agency for environmental management is the National Environment Division (DINAMA), created under budget law number 16.123 on October 1, 1990.

The law by which MVOTMA was created provides for the establishment of an interinstitutional coordinating body, composed of public- and private-sector organizations designed to furnish technical advice on environmental matters.

The State's leadership role in relation to the Montreal Protocol resides entirely in the Ministry of Housing, Development Planning and the Environment, via DINAMA.

Five governmental measures constitute the essence of this plan: (1) creation of the Government Commission for Ozone (COGO) and the Consultation Committee; (2) implementation of an ozone certification seal; (3) implementation of a public publicity and awareness program; (4) organization of technical retrofitting programs by specific sectors (training, recycling, etc.); (5) implementation of a program comprising laws and standards for different areas of the economy. A possible medium-term measure would be the creation of a Technological Retrofitting Funding Program designed as an incentive to make use of new technological alternatives. Such an incentive could take the form of a US-dollar subsidy for a certain reduction in kilos ODP over a specific time period.

To comply with the first stage of the Country Program and remain eligible for financial assistance -- following further studies -- in the framework of the Technological Retrofitting Funding Program, there is a need to create a technical institutional structure so that projects can be carried out efficiently and with only a minimum of bureaucracy.

The Government Technical Commission for Ozone (COGO) will consist of a team of two technicians and will be provided with an appropriate infrastructure for its operations by the Montreal Protocol Fund.

A group of consultants will be formed with representatives from private enterprise, the Semi-State Organization for Quality Standards and Control (LATU), the Universidad de la República and the ministries of Economy and Finance and Public Health. In addition, there will be a consultation mechanism involving all these different interests.

Implementation of the Ozone Certification Seal consists of providing consumers with adequate information on final products that do not harm the ozone layer and thereby having an effect on the demand for such products.

The purpose of the Public Awareness Program is to promote the consumption of products that are less harmful or totally inoffensive to the ozone layer (ozone-friendly products) by providing information through the media and other means on the consequences of damaging the ozone layer.

The Specific Sector Training Program consists of work meetings, seminars, technical assistance and information for each industrial sector.

The creation of the Government Technical Commission for Ozone (COGO) will allow for coordination and control of the agreements and of the proposed Action Plan.

The purpose of the Legal Implementation Program is to create a corpus of standards and laws that are coherent with the different areas of production.

We consider that these measures will have an effect on the law of supply and demand so as to reduce the consumption of controlled substances that deplete the ozone layer.

In the following chart we present a summary by sectors of the different governmental measures and the costs associated with each of them.

CHART 1

GOVERNMENTAL MEASURES

<u>YEAR</u>	<u>DESCRIPTION</u>	<u>SECTORS INVOLVED</u>	<u>OBJECTIVES</u>	<u>COST (US\$)</u>
1993 1994	Specific Sector Training Program	Foams, halons, refrigeration, air conditioning, solvents	Provide technical assistance for firms to minimize emissions and/or the use of controlled substances	136,950
1993 1994 1995	Ozone- Friendly Seal Program	Aerosols Refrigeration Air conditioning	Develop standard certification levels for products that do not use ODS	41,800
1993 1994 1995	Public Awareness Program	Consumers	Encourage the consumption of products manufactured without ODS and provide education concerning the harmful effects of ODS	87,000
1993 1994	Standards and Laws Program	All industrial processes	Create a coherent corpus of standards and laws regulating the use of ODS	13,200
1993 1994 1995	Government Technical Commission for Ozone (COGO)	All sectors	Coordinate the execution and control of the different programs mentioned above	91,000

URUGUAY

**IMPLEMENTATION OF THE
MONTREAL PROTOCOL**

**NATIONAL PROGRAMME FOR THE GRADUAL
REDUCTION OF CONSUMPTION OF SUBSTANCES
THAT DEplete THE OZONE LAYER**

**Ministry of Housing, Land-Use
Management and the Environment**

**National Environment Agency
Department of Global Atmosphere**

**Montevideo
March 1993**

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EXECUTIVE SUMMARY

The Government of Uruguay is fully committed to fulfilling the agreements entered into under the Protocol and to gradually phase out its consumption of substances that deplete the ozone layer (ODS).

The Government of Uruguay ratified the Vienna Convention for the Protection of the Ozone Layer on 27 February 1989, and the latter entered into force on 28 May 1989. On 8 January 1991, it signed the Montreal Protocol, which entered into force on 8 April 1991.

Uruguay falls under the status provided for in paragraph 1, article 5, and is therefore one of the countries eligible for financing under the Multilateral Fund of the Montreal Protocol.

The document submitted establishes funding requirements of US\$ 409,950, to finance the first phase of the programme (1993-1995). A 30 per cent reduction in current consumption is expected as a result of the implementation of this initial phase of the programme. This reduction is equivalent to approximately 95 metric tons.

The Government of Uruguay bases its economic development policy on the participation of both private enterprise and the public sector.

The format recommended by the Executive Committee for the preparation of the country programme describes Uruguay's consumption of controlled substances, the best estimates of use and the proposed programme to reduce and gradually phase out such consumption, in accordance with the commitments entered into under the Protocol.

1992 was taken as the base year. In that year, Uruguay consumed 316.58 metric tons, equivalent to 314.16 metric tons of Ozone-depleting potential (ODP).

Assuming the absence of the Montreal Protocol and an annual rate of increase in consumption of 1.9 per cent, consumption in the year 2010 is projected to be 444.24 metric tons.

In 1992, 36.9 per cent of total consumption was of CFC 11, 58.3 per cent CFC 12, 1 per cent CFC 113, 0.3 per cent halons, and 3.3 per cent was of the controlled substances listed in Annex B of the Protocol.

Uruguay produces none of the substances listed in Annex A of the Montreal Protocol, and its consumption requirements therefore correspond to the imports of such substances.

Uruguay has selected a programme which, with Government interventions, affects the supply and demand of the market for goods and inputs which use ODS.

Certain interventions are aimed at influencing consumer behaviour (public awareness campaigns, ozone-friendly seals, etc.), while others seek to bring about a decline in the use of ODS by gradually reducing supplies (technical and financial assistance).

In other words, the country and the Government will promote private sector initiatives to implement the Montreal Protocol, instead of leaving the management, organization and control of matters relating to the ozone layer in the hands of an unwieldy State apparatus. It is with this aim in mind that the Technical Government Commission on the Ozone Layer (COGO) has been established.

The success of these programmes is dependent on the fulfilment of the first-phase objective of a 30 per cent reduction.

The Government of Uruguay's economic policy is based on a free market economy, with an important role given to the public sector - a policy known as economic growth with social justice. No major changes in this model are expected.

The main issues to be addressed in this three-year initial phase are:

- (a) Consolidation of the conversion of propellants in the aerosol industry.
- (b) Technological conversion to methylene chloride during production of flexible polyurethane foam, or new short-term formulas.
- (c) Introduction of re-engineering and recycling technologies in the maintenance and servicing of refrigerants and air-conditioning.
- (d) Re-engineering of non-essential uses of halons.
- (e) Training and technical assistance in the field of air-conditioning and solvents.
- (f) Pre-investment study in the areas of refrigeration and air-conditioning, with the focus on the incremental costs of re-engineering.

In keeping with its economic policy, the present Government has decided not to impose duties and/or quotas for the importation of ozone-depleting substances and instead to introduce incentives to promote private sector initiatives. Against this background, it has

proposed a plan of action which is consistent with the economic policy described above.

On the other hand, it is important to mention that the long-term technological re-engineering programme must take account of Uruguay's situation in relation to its neighbouring countries. It is therefore important to establish mechanisms for generating projects in the MERCOSUR area (Argentina, Paraguay, Uruguay).

The principal uses in Uruguay from 1986 to 1992 have been for the maintenance of refrigeration and air-conditioning equipment, foams and, up to 1991, also aerosols.

Uruguay does not manufacture any ODS's whose use is controlled under the Montreal Protocol.

In 1992, distribution by use was as follows:

Aerosols:	23 tons
Refrigeration:	18 tons
Solvents:	15.4 tons
Air-conditioning:	2 tons
Extinguishers:	1.1 tons
Foams:	107 tons
Maintenance (refrig. & air-conditioning):	143 tons

The principal use of carbon tetrachloride is as a solvent, as is methyl chloroform. Imports in 1992 were approximately 10 metric tons and the historical consumption of these two products has been uneven.

The compilation of importation and consumption data (see Annex) was undertaken by members of the COGO through the Bank of the Republic, interviews with users, and from information provided by the Industrial and Technological Information Service of the Ministry of Industry.

While the figures for imports are reliable, their usefulness is limited by the absence of disaggregated customs codes for the period up to September 1991.

The 1992 data for imports are highly reliable, since they reflect the disaggregation that took place following the amendments to the codes published in the official journal of 2 September 1991.

At the institutional level, Uruguay has an agency that deals with environmental issues, which is the Ministry of Housing, Land-Use Management and the Environment (MVOTMA), established under decree No. 16.112 of 30 May 1990. The executing agency of the above-mentioned Ministry which is responsible for environmental management, is the National Environmental Agency (DINAMA), which was established by budget decree No.16.123 of 1 October 1990.

The decree establishing MVOTMA provides for the creation of an inter-institutional coordinating agency comprising public and private bodies which would provide technical assistance in the field of the environment.

The guiding role of the State of Uruguay in the implementation of the Montreal Protocol is the exclusive responsibility of the Ministry of Housing, Land-Use Management and the Environment, through DINAMA.

The plan of action is composed essentially of five (5) Government initiatives: (1) establishment of the Government Commission on the Ozone Layer (COGO) and the Advisory Committee, (2) introduction of a ozone certification seal, (3) implementation of a programme of public education and awareness, (4) organization of sector-specific technical re-engineering programmes (training, capacity-building, recycling, etc.), (5) implementation of a body of legislation and norms in the various sectors of the economy; and, as a medium-term initiative, the possible introduction of a programme for the financing of technological re-engineering, which could be conceived as an incentive for the use of new technological alternatives, through a subsidy expressed in US dollars per kilogram of ODP saved over a given period of time.

In order to ensure the execution of this initial phase of the country programme, and also to leave open the possibility - depending on research still to be carried out - of requesting funds for the programme for the financing of technological re-engineering, it would be necessary to develop technical structures at the institutional level that would render project execution more flexible and less bureaucratic.

The Technical Government Commission on the Ozone Layer (COGO) will be composed of a team of two technical experts who will have adequate infrastructure to carry out their work, provided by the Multilateral Fund of the Montreal Protocol.

An Advisory Committee will be established comprising representatives of the private sector, the Parastatal Agency for Standards and Quality Control (LATU), the University of the Republic, and representatives of the Ministries of the Economy and Finance, and of Public Health, as a mechanism to facilitate consultations among the various interests involved.

The introduction of a ozone certification seal is intended to influence demand by placing at the disposal of the consuming public reliable information on finished products which do not harm the ozone layer.

The public awareness programme is aimed at promoting consumption of products which cause less harm or no harm at all to the ozone layer ("Ozone-friendly"), and sensitizing the public through the mass media and other means to the consequences of damage to the ozone layer.

The sector-specific training programme consists of working meetings, seminars, technical assistance and information for each industrial sector.

The Technical Government Commission on the Ozone Layer (COGO) will coordinate and monitor the agreements and proposed plan of action.

The legislative programme is intended to develop a body of legislation and norms that regulate activities in the various areas of production involved.

In this way, we believe that the elements of supply and demand are being affected thereby reducing the consumption of the controlled substances that deplete the ozone layer.

The attached table presents a summary of the various actions undertaken by the Government in each sector and the requirements for each of them.

Table 1

GOVERNMENT INITIATIVES

YEAR	DESCRIPTION	SECTOR INVOLVED	OBJECTIVES	COST IN US\$
1993 1994	Sector-specific training programme	Foams, Halons, Refrigeration, Air-conditioning, Solvents	To provide technical assistance to enterprises for reducing emissions and/or use of controlled substances	136,950
1993 1994 1995	Ozone-Friendly Seal Programme	Aerosols Refrigeration Air-conditioning	Development of standard certification criteria for products which do not use ODSS	41,800
1993 1994 1995	Public Awareness Programme	Consuming public	To promote consumption of products which do not use ODSS, and to provide education on the harmful effects of ODSS	87,000
1993 1994	Legislative and regulatory Programme	All industrial processes	To develop a coherent body of legislation to regulate the use of ODSS	13,200
1993 1994 1995	Technical Government Commission on the Ozone Layer (COGO)	All sectors	To coordinate the execution and control of the various programmes involved	91,000

1. INTRODUCTION

1.0 General considerations

Uruguay's development strategy is based on the idea of economic growth with social justice. This initiative assumes greater importance given the fact that the country has decided to join a subregional market (MERCOSUR), which requires that it undertake a general economic restructuring to give it access to expanded, and more dynamic and competitive markets.

Since that process has many implications and repercussions in the political, economic and social fields, the society has been engaged in redefining the role of the State, re-engineering of the processes of production, technological and scientific development, and such other issues as job creation and income distribution.

The Government has structured a development strategy which revolves around the following elements:

- (a) Reducing inflation and renegotiating the external debt.
- (b) Promoting productive investment.
- (c) Launching the process of subregional integration (MERCOSUR) as a key element in the process of external opening.
- (d) Social emergency programme.
- (e) State reform.

At the same time, the Government has developed a strategy to promote Uruguay as a "natural country" and to develop heightened ecological awareness among the population to permit the rational management of ecosystems and prevent the degradation of non-renewable natural resources.

GDP in 1991 was \$9,479 million. In real terms, GDP increased by 22.3 per cent over its 1985 level and is now equal to the 1980 level. In 1991, it increased by 1.9 per cent over 1990.

Total gross domestic investment was 13 per cent of GDP in 1991.

The country's population has remained constant in absolute terms. The 1985 census figure was 2,955,241, with 49 per cent men and 51 per cent women. Of this total, 44.4 per cent lived in Montevideo, the country's capital.

Half of the population is over 30 years old.

The urban population was 89.3 per cent of the total and the rural population, 10.7 per cent. The economically active urban population was 44.1 per cent. The unemployed in Montevideo accounted for 9.8 per cent of the economically active population during the first half of 1992.

According to the latest population census in 1985, 4 per cent of the population over 10 years old was illiterate.

(Note: Data extracted from "National Report for the United Nations Conference on Environment and Development", and from the UNDP publication, "Uruguay - Report on Cooperation and Development").

1.1 Objective

1. The desire of the State of Uruguay to develop a policy of protection of the environment has been demonstrated through its establishment of mechanisms to protect the environment and to improve the quality of life with due regard for the ecosystem. In pursuit of this objective, the Government established the National Environmental Agency (DINAMA) in 1990 as the executing agency of the Ministry of Housing, Land-Use Management and the Environment (MVOTMA).

2. Emissions and use of totally halogenous CFCs and other substances controlled by the Montreal Protocol could considerably deplete the ozone layer or modify it in some other way. This would have possibly adverse repercussions for all of mankind, particularly for the developing countries. At the same time, recognizing the need to continue evaluating possible changes and their potentially adverse effects, the State of Uruguay considered it timely and necessary to adhere to and ratify the Vienna Convention and the Montreal Protocol concerning ozone-depleting substances. It has thus committed itself to fulfilling the obligations set forth in the above-mentioned international instruments.

3. This document presents the programme of activities which the country will implement during the years 1993-1995, the period corresponding to the first stage of the process to phase out consumption of those ODSs controlled by the Montreal Protocol. The objective of the plan of action designed for the first three years of the country programme is the gradual phasing out of ozone-depleting substances (ODSs) during the grace period granted to developing countries, in accordance with article 5, paragraph 1, of the Protocol.

The principal issues to be addressed during the first three years include institutional strengthening and projects for training, retraining, and capacity-building, together with the study of investment projects for technological re-engineering.

This programme sets out the commitments for reducing consumption of ODSs during the first three years.

4. In accordance with the procedures established by the secretariat of the Multilateral Fund, the programme registers and presents the information and analysis on which the plan of action developed in Uruguay's country programme is based.

5. Uruguay fulfils the requirements for presenting the said programme to the Multilateral Fund of the Montreal Protocol, and to request financing, given the fact that its annual per capita consumption is 0.11 kilograms. The Programme is estimated to cost US\$409,950 in its initial phase.

1.2 Character

6. The programme was prepared by the Government of Uruguay through the National Environmental Agency, which falls under the Ministry of Housing, Land-Use Management, and the Environment, in collaboration with the UNDP consultant.

The Technical Secretariat for Global Atmosphere participated in its elaboration, which was the result of a series of interviews conducted in the industrial sector, and exchanges with other Ministries and with the Technological Laboratory of Uruguay (LATU).

7. The data on consumption and use were prepared by Mr. Luis A. Santos and Mrs. Miriam Vega, both members of COGO, with technical assistance from UNDP.

8. The version presented has been approved by the Ministry of Housing, Land-Use Management and the Environment.

1.3 Assistance received.

9. At the request of the Government of Uruguay, the preparation of this document benefitted from the technical assistance of UNDP, the executing agency of the Fund, through Mrs. Maria A. Vega of KIEN Consultants, Chile.

2. CURRENT SITUATION

2.1 Current and projected consumption.

2.1.1 Current consumption

10. Uruguay neither produces nor exports any type of controlled substance and therefore, in accordance with the conclusions of the pertinent economic panels and with current definitions under the Protocol, consumption in Uruguay is equivalent to imports.

11. While data on historical levels of importation are somewhat limited, the best available estimates indicate a total consumption for the year 1992 of 316.58 metric tons and an ozone-depleting potential of 314.16 metric tons. Per capita consumption is 0.11 kilograms per year.

12. The sectors of use are basically: refrigeration, foam, solvents, air-conditioning, aerosols and fire extinguishers. In some of these sectors research was carried out on the use of ODS based on interviews with the main industries in the specific sector of use.

13. The estimated historical data for imports between 1986 and 1990 are as follows:

Group 1 of Annex A.
Figures in metric tons.

Year Substance	1986	1987	1988	1989	1990
CFC 11	53.8	72.3	95.18	97.66	97.65
CFC 12	262.9	61.35	322.16	423.30	310.65
CFC 113	5.6	n.a.	n.a.	n.a.	n.a.
CFC 114	1.6	n.a.	n.a.	n.a.	n.a.
CFC 115	0.0	n.a.	n.a.	n.a.	n.a.
Remainder			22.32	13.01	21.45
Total	323.88	133.65	429.66	534.00	426.75

14. In the compilation of this data, account has been taken of the fact that up to 1991 the information was not disaggregated. In accordance with estimated data for 1992, which are more reliable, the data for CFC 11 and other substances show the same trend, with the exception of 1987 (see Annex).

In working on the country programme commitment to reduce consumption of ODSs, we propose to use the real figures for 1992.

15. Group 2 of Annex A.
Figures in metric tons.

Note: Disaggregation in the years following 1986 could only be done on the basis of the 1986 proportion of halons, in substances identified as "others". In 1991, estimates were based on data obtained directly from importers.

Substance	1986	1991
Halon 1211	4.9	1.5
Halon 1301	1.5	0.5
Halon 2402	0.0	0.0
TOTAL	6.4	2.0

16. Imports of methyl bromide, a listed substance, were:

Year	1990	1991	1992
In Metric tons	4.0	5.5	4.5

17. CURRENT CONSUMPTION

Consumption for 1992, broken down by substance.
(Imports = Consumption)

1992

Metric tons Substance	Consumption	ODP	Consumption ODP
Group 1 ANNEX A			
CFC 11	116.91	1.0	116.91
CFC 12	184.62	1.0	184.62
CFC 113	3.13	0.8	2.50
CFC 114	0.54	1.0	0.54
CFC 115	0.00	0.6	0.00
SUBTOTAL	305.20		304.57
GROUP 2 ANNEX A			
HALON 1211	1.09	3.0	3.27
HALON 1301	0.00	10.0	0.00
HALON 2402	0.00	6.0	0.00
SUBTOTAL	1.09		3.27
GROUP 2 ANNEX B CARBON TETRACHLORIDE	5.29	1.1	5.82
GROUP 3 ANNEX B 1,1,1 TRICHLOROETHANE	5.00	0.1	0.50
TOTAL CONSUMPTION IN TONS	316.58		314.16

Source: Data compiled by DINAMA, Uruguay, 1992. Bank of the Republic.

18. In accordance with the new customs and import duties nomenclature (NADI), imports in 1992 of substances listed under the head: 29.02.01.13, corresponding to "Other Chlorofluoromethanes", were 87.44 tons, and this head includes FCFC 22 and CFC 502.

19. In the case of Uruguay, although centralized data for imports were made available through the Ministry of Industry and the Bank of the Republic, the credibility of the data up to 1991 is not very high, given that imports for HCFC 22 were not identified, which would indicate that they were included under the previous head with the modifications that took place prior to September 1991.

Data subsequent to September 1991 are very reliable, with the exception of user-based estimates of methyl chloroform.

Estimates of use were based on interviews and on research conducted by the Global Atmosphere Department.

20. Estimates of use have been based on requirements for the maintenance of the current national stock of refrigeration and air-conditioning equipment. The stock of domestic refrigerators is estimated to be 637,000, while annual production is 40,000. Air-conditioning equipment is estimated to be 45,000 units.

21. The country has a free-port system and the recharging of vessels with ODS is deemed to be effected on the high seas and the physical imports are deemed to be transfers which are not recorded as goods entering the country. For vessels flying the national flag, this figure is estimated to be 4 metric tons of CFC 12, since the vast majority of them operate with HCFC 22.

22. DISTRIBUTION OF SUBSTANCE USE, 1992
CONSUMPTION = 316.58 metric tons.

SUBSTANCE (domestic use)	USE	METRIC TONS	
CFC 11 (116.9 metric tons)	Rigid foam	37.0	11.4
	- Refrigeration		
	Flexible foam		
	- mattresses etc.	19.0	6.0
	- Insulation, injected	36.0	11.4
	- Insulation, heating	11.5	3.6
	Other foams	3.5	1.1
	Aerosols		
	- Medicinal	5.0	1.6
CFC 12 (184.6 metric tons)	Cleaning of circuits	2.0	0.6
	Other	2.9	0.9
	Aerosol	18.0	5.7
	Refrigeration		
	- Domestic	7.0	2.2
	- Commercial	6.0	1.9
	- Industrial	5.0	1.6
	Air-conditioning	2.0	0.6
	Maintenance	143.0	45.2
CFC 113	- Refrigeration		
	- Air-conditioning		
	Other	5.0	1.6
CFC 113	Solvents	3.1	1.0
Halon 1211	Extinguishers	1.1	0.3
Halon 1301	Extinguishers	0.0	0.0

CC14	Solvents	5.3	1.7
MCF	Solvents	5.0	1.6
Total		317	100%

Source: Data compilation, DINAMA, Uruguay, 1992.

2.1.2 Projected consumption

23. The average annual demand for CFC between 1986 and 1992 was in the vicinity of 410 tons and estimated future demand could see an increase of 1 per cent (growth in GNP) over 1992 (314.68 tons). In other words, for the period 1993-1995, estimated CFC consumption will be 335 tons and, based on consultations in the sector, consumption of halons is projected to be 2 tons. On the assumption that unlimited quantities of controlled substances will continue to be available in future, carbon tetrachloride and methyl chloroform have been included in this projection of consumption.

24. Based on the following assumptions: that there is no intention to comply with the provisions of the Montreal Protocol and that unlimited quantities of ODSs will continue to be available at current prices, given the fact that GNP growth in 1991 in relation to 1990 was 1.9 per cent, demand may be expected to parallel the growth trends in the economy.

The breakdown of GDP by main activities is: agriculture and fishing 9.3 per cent, industry and construction 27.4 per cent and services 63.3 per cent. In constant terms, between the years 1986 and 1989, the industrial, agricultural and fishing sectors have not undergone any significant changes and the 1.9 per cent growth of the economy may be used as a yardstick to project the increase in demand for ODSs.

25. Based on these assumptions, up to the year 2010 consumption of 436 metric tons is projected.

26. On the other hand, it must be remembered that the subregional MERCOSUR agreements as well as the establishment of a free zone, will lead to a number of new industries being set up in the country. The most important of these is York International Corporation, which built a plant in 1992 in the Free Port of Montevideo to manufacture air-conditioning equipment using HCFC 22, a transitional substance. This is likely to be the trend for other potential industries that are attracted there by customs exemptions.

27. According to the 1985 census, Uruguay's population is 2,955,800 with an average annual growth rate of 0.5 per cent during the decade 1975-1985. For purposes of analysis, the population may be estimated in constant figures.

28. During the period 1986 to 1991, GDP exhibited the following trends:

1986	8.8 per cent	1987	7.9 per cent
1988	0.0 per cent	1989	1.3 per cent
1990	0.9 per cent	1991	1.9 per cent

29. The literacy rate for persons over 10 years old is 95.7 per cent.

30. The following table shows the possible projections of consumer demand in the country up to the year 2010. The trend may indicate a growth in current demand of approximately 1.9 per cent in view of both consumption levels and the importation of air-conditioning and refrigeration equipment.

YEAR	METRIC TONS	YEAR	METRIC TONS
1993	323	2002	382
1994	329	2003	389
1995	335	2004	397
1996	341	2005	404
1997	348	2006	412
1998	354	2007	420
1999	361	2008	428
2000	368	2009	436
2001	375	2010	444

Assumptions: rate of increase in CFC use of 1.9 per cent per annum, equal to the GNP growth rate.

2.2 Industrial structure:

31. The industrial sector that uses controlled substances has not been totally described and/or detected, although the sectors of foam and the maintenance of air-conditioning and refrigeration equipment have been covered in greater depth.

32. Uruguay has no ODS industries. The main importing firms in the country are:

ICI Uruguay S.A.
ORBEN S.A

Agents for ICI
Agents for Dupont

Tornay y Mori S.A	Direct importers of Halon 1211 from ICI and Halon 1301 from Sovay GmbH
Izeta Lopez S.A	Direct importers of Halon 1211 from Dupont (United States), Kalichemie (Germany)
DOW Chemicals	Methyl chloroform.

33. Imports of CFC are subject to the following import duties:

NADI code

29.02.01.03 and 04	10 per cent
38.19.89.84	35 per cent, valid up to the year 1987, under the MERCOSUR agreement.

34. Uruguay's industrial stock is relatively small. The industrial structure is based mainly on food production, in which beef products play a preponderant role, followed by petroleum derivatives, the leather and footwear industries, and textiles. The 1989 census recorded a total of 25,042 industries in the country, 86.2 per cent of them employing less than 10 persons. These are concentrated basically in Montevideo.

35. For the purposes of the country programme and the commitment to the gradual reduction of consumption of controlled ODSs, the principal industries concerned are:

Mattress Factory DIVINO S.A., with an 80 per cent market share.

Insulation: Metalizadora Uruguay, with a 50 per cent market share.

Refrigerator manufacturers: INDUNOR, manufactures 20,000 refrigerators per year, with approximately 75 per cent of the market.

Commercial refrigerators: TOPSY, 30 per cent market share.

Maintenance and service of domestic, commercial and industrial refrigerators: REPLAST S.A., FRIELECTRIC, INDUNOR.

Air-conditioning for buses and cars: SINFAX, 96 per cent market share for buses and 20 for cars.

Mobile and fixed air-conditioning: Equipo y Ing. Ulises Puig.

Aerosols: Terry S.A.

Carbon tetrachloride: CREDINVERT S.A.

36. In general, industries related to ODSs are usually aware of the country's existing commitment in the field of environment. This is

due to their interest in remaining competitive vis-à-vis Brazilian and Argentine industries. Consequently, the investment studies undertaken could provide a mechanism for technical and financial assistance per kilogram of CFC saved.

37. Agents in this market clearly agree on the feasibility of significantly reducing consumption, and have expressed their total willingness to assume responsibility for management of recovery projects, recycling, and technical training. They require more technical data on international progress in the area of substitutes for refrigerants and recovery and recycling units.

38. It has not been possible to gain access to the figures for ODS consumption for the aircraft of the armed forces.

39. The principal countries from which ODSs are imported are: Brazil, United States, United Kingdom and Germany.

40. ODSs are not produced in the country.

2.2.1 Use:

41. The main uses of CFC are for the manufacture of refrigerators and air-conditioning equipment. An important item of consumption are workshops for the repair of refrigeration and air-conditioning equipment, both domestic and industrial. The suppliers to these small workshops can be the focal points for training projects.

42. Refrigeration

Uruguay produces approximately 40,00 units of domestic refrigerators per year and current stock is estimated to be 637,000. Domestic and commercial refrigerators are also imported from Brazil and Italy.

The annual consumption in Uruguay for refrigerators accounts for 44 per cent of national ODS consumption. Of this consumption 2.2 per cent represents domestic refrigeration, 1.9 per cent, commercial refrigeration, 1.6 per cent, industrial refrigeration, and 37 per cent commercial, domestic and industrial maintenance, cold storage and refrigerated transport.

Essentially, consumption is for the replacement of losses in operating systems and recharging for the maintenance of equipment. The programme recommends the transfer of technology with the assistance of international consultants and visits abroad by local experts. It also requires basic equipment to launch the processes of recovery and recycling.

43. Foam

Flexible polyurethane is mainly used in the manufacture of mattresses and as thermal insulation in construction (22 per cent of national ODS consumption).

Rigid foam is used in domestic and commercial refrigeration insulation (11.7 per cent of national ODS consumption. The programme envisages a training seminar with technical assistance for that sector.

44. Air-conditioning

Because of its climatic conditions, Uruguay is a country which has always imported and manufactured air-conditioning equipment. Approximately 45,000 window units exist in the country. There are also larger sized air-conditioning units in the industrial, service (tourism and hospitals), and commercial sectors. The transport sector is of little significance. There is also a group of national advisers on the subject in which technical seminars are proposed.

With respect to ODS consumption by air-conditioning equipment in 1992, 0.6 per cent was estimated to have been used in the installation of equipment, and approximately 7 per cent in their maintenance.

45. Solvents

The data collected show that during 1992 5.2 metric tons of CC14 and 5.0 metric tons of MCF were imported. The main uses of these solvents are in the metallurgical industry, and in the cleaning of electric motors, mainly in the tobacco industry.

CFC 113 is also used as a solvent, with a consumption of 3.1 metric tons in the year 1992.

46. Halons

Preliminary data, over and above the figures for 1992, show an average annual rate of consumption of 1.5 metric tons of halon 1211 and of 0.5 metric tons of halon 1301, equivalent to 0.6 per cent of national consumption.

Uruguay's consumption is mainly for essential uses. However, it will be necessary to incorporate the banking and insurance sectors as well as the fire service for training activities in the control and acceptance of other types of extinguishers in non-essential areas.

47. Aerosols

During 1991, approximately 30 metric tons were used for this purpose. However, in 1992, the aerosol sector drastically reduced its consumption of CFC12, and according to interviews carried out,

the main use of aerosols was for medical applications and for the perfume industry.

2.3 Institutional framework:

48. In the Government and Parliament:

- Ministry of Housing, Land-Use Management and the Environment of Uruguay (MVOTMA).
- National Environmental Agency (DINAMA), a unit of the Ministry of Housing, Land-Use Management and the Environment.
- Division of Environmental Health, Ministry of Public Health.
- National Fire Service, Ministry of the Interior.
- Ministry of Industry and Energy.
- Ministry of the Economy and Finance.
- Environmental Committee of the Chamber of the Senate.
- Environmental Committee of the Chairman of Deputies.

49. The Government Commission on the Ozone Layer has been established and will be physically located in the offices of DINAMA. Mr. Luis Santos will head this Commission as the technical Government official assigned to these tasks during the next three years. Also serving on the Commission will be Mrs. Mirian Vega, who will assist in the discharge of the responsibilities assigned to this unit.

50. The function of COGO will be to coordinate with the Government sector and Government entities the projects under the current country programme and, for this purpose, it should coordinate the activities of the various agencies and ministries:

Ministry of the Economy and Finance and the National Customs Office in order to speed up procedures for the registration of international trade in controlled goods and substances;

Ministry of Public Health, Division of Environmental Health, with responsibility for designing and finalizing procedures for the registration and control of imports and use of controlled substances. This division, in addition to its regular work, will undertake visits and inspection tours of the industrial sector in the 19 departments;

Bank of the Republic, Department of Foreign Trade, receiving and sending reports containing information on controlled substances;

The Ministry of Industry and Energy and the Ministry of Education and Culture for the establishment of mechanisms and procedures for coordination and data delivery, as well as for technical support in the implementation of the country programme.

51. In addition, COGO will convene the Advisory Committee at appropriate intervals and shall issue quarterly reports on consumption levels pursuant to the Montreal Protocol.

52. The responsibilities of the Department of State of Uruguay under the Montreal Protocol is discharged solely by the National Environmental Agency, of which COGO is a branch.

COGO will be responsible for project implementation and for preparing the terms of reference for invitations to tender for each project. This is so because of the need to develop flexible institutions and to avoid the creation of burdensome administrative procedures which impede the rapid fulfilment of the objectives of the Montreal Protocol.

53. The relevant provisions concerning the foregoing are contained in the ministerial decision dated 3 March 1993, which establishes the functions of COGO and of its members.

54. Industrial associations.

The main association of private industry in the country is the Chamber of Industries of Uruguay, which was established on 12 November 1898.

The Commission on the Environment, currently chaired by Mr. Armen Chamyan, is fully prepared to participate in and to coordinate with the Government the various initiatives taken for the implementation of the country programme.

The importers, distributors and users of ozone-depleting substances in each sub-sector are affiliated to the Chamber and have a reasonable supply of data on substitution techniques, market control and access to financial resources.

55. Other agencies which can contribute to this effort are the commercial sector, supermarkets, parastatal agencies for quality control, etc.

56. The national mass media already displays some interest in issues concerning the environment and the ozone layer, which

should enhance the effectiveness of the public awareness campaign.

2.4 Policy framework:

57. The Government's policy for the gradual phasing out of ODS in Uruguay relies heavily on action to provide incentives for voluntary agreements with the private sector to accelerate the necessary technological changes, and on action to influence consumer behaviour. This policy will not distort the regulatory mechanisms operating in the market in any significant way. Operating alongside these will be a body of regulations, norms and laws to ensure compliance with the obligations assumed by the country. These include the regulation of aerosols and limits to insurance coverage and new investments aimed at discouraging the use of controlled ODS.
58. The Minister of Housing, Land-Use Management and the Environment, Mr. Manuel Romy, aware that the volume of national consumption of ozone-depleting substances is close to 317 tons per annum and that this amount is used mainly for refrigeration purposes, in homes, solvents, and in fire extinguishing and air conditioning equipment, has resolved to work in future through conventions and supplementary agreements signed with Government agencies and the domestic private sector. There are no plans for the use of economic policy mechanisms, such as quotas, customs tariffs and levies to bring about a reduction in consumption.
59. Within the state apparatus, mechanisms of coordination and information will be developed to ensure proper control of import data, technical transfers and implementation through COGO.
60. The main thrust of the work of the Government Commission on the Ozone Layer (COGO), will be maintenance, data compilation, distribution of technical information, and public awareness campaigns. It will coordinate workshops and training seminars for private sector personnel in enterprises and technical maintenance services. It will also coordinate technical reports, publications and training aimed at reducing the consumption and/or emission of controlled substances.

2.5 Reaction of Government and industries to the Protocol

61. The Government of the Eastern Republic of Uruguay ratified the documents of accession to the Vienna Agreement and the Montreal Protocol on 27 February 1989 and 8 January 1991, respectively.
62. Also, in September 1991, through circular 96/75 it decreed appropriate amendments to the Protocol on Customs and Import

Duties Nomenclature (NADI) to the Protocol on Export Duties (NADE).

63. An agreement has been signed between the National Meteorology Department and the Faculty of Science of the University of the Republic on the one hand, and UNDP, on the other, for the installation of ozone-measuring equipment in the country, which will constitute part of the regional network for measuring the ozone layer.
64. An agreement on bilateral cooperation between DINAMA and USEPA has been signed for the installation of equipment for the recycling of Halon 1211.
65. The country programme envisages the launching of publicity and information campaigns through the national news media and the adoption of measures by industry to introduce substitutes and technological alternatives required for these purposes.

3. IMPLEMENTATION OF MEASURES TO ENSURE PHASED ODS ELIMINATION

3.1 Declaration on the strategy of Government

66. The strategic objectives pursued in the plan of action for the gradual phasing out of ozone-depleting substances are consistent with the Government's current economic policy which seeks to promote a change in the industrial structure. This is manifested in its intention to observe the limits established under the Protocol for the consumption of ODS in those countries covered under article 5, paragraph 1. For those substances in Annex 1, part A and B of the Protocol, in the first phase of the programme covering the years 1993-1995, a 95 metric ton decline is projected, equivalent to 30% of current consumption. In other words priorities are being set within the mechanisms of market adjustment.

3.2 Plan of action and projects involved.
(1993-1995)

During the preparation of this programme proposal, the team worked together with Government officials in the formulation of the implementation strategy.

The central element in this strategy is the coordinating role of the Government Commission on the Ozone Layer (COGO), in which the private sector is responsible for the implementation of programmes and projects designed to be tendered out. This explains why projects include items on follow up and management, which are not included in the financing proposal of COGO.

COGO is currently working with the industrial sector on the preparation of the following elements for implementation:

- . terms of reference of the projects:
- . plan of action:
- . schedule of activities for implementation.

The plan of action which the Government will implement for the elimination of substances controlled under the Montreal Protocol, in accordance with the strategy defined in paragraph 3.1, covers those projects which are described in paragraphs 3.2.2 and 3.2.3.

3.2.1 Government measures:

67. In order to achieve the gradual elimination of ODS, the Government intends to adopt the following measures.

- 1) Establishment of a Government Commission on the Ozone Layer (COGO) and the National Advisory Committee.
- 2) A legal regulatory framework to give effect to the intention expressed by the Government in the country programme, thereby affecting demand and supply.
- 3) The organization of sector-specific technological re-engineering programmes (training, capacity-building, recycling, etc). Affecting supply.
- 4) Studies of existing infrastructure by sector to determine economic value of the incremental costs of re-engineering technologies. Affecting supply.
- 5) Launching of a public awareness and sensitization campaign to influence demand through changes in consumer behaviour.
- 6) Introduction of an "ozone-friendly" seal. Affecting demand.

68. COUNTRY PROGRAMME PROJECT MATRIX - MONTREAL PROTOCOL
INSTITUTIONAL PROJECTS

CATEGORY SHORT TERM (1993-1995)	DESCRIPTION OF ACTIVITIES	REDUCTION IN TONS OF ODP, AND PERCENTAGE FOR 1992	TOTAL VALUE OF PROJECT IN US \$	DATE
Technical Government Commission on the Ozone Layer (COGO)	Management, coordination, control, plan of action	95 MT 30%	91.000	1993 1994 1995
Changes in laws	Drafting of laws that are consistent with the plan		13.200	1993 1994
Public information	Leaflets, videos and media campaign		87.000	1993 1994 1995
Ozone- friendly seal	Design of a standard seal		41.800	1993 1994 1995
International advisory services	Technical assistance		40.000	1994 1995
Estimated total			273.000	

INDUSTRIAL PROJECTS

CATEGORY - SHORT-TERM (1993-1995)	DESCRIPTION OF ACTIVITIES	RELEVANT ODS CONSUMPTION IN METRIC TONS AND PERCENTAGE IN 1992	TOTAL VALUE OF PROJECTS IN US \$	DATE
Flexible foam	Reduction and change in CFC	22 M.T. (33%)	22,000	1993 1994
Rigid foam	Technical assistance. Seminar	11 M.T. (29%)	22,000	1993 1994 1995
Aerosols	Promotion of substitution	9 M.T. (50%)	11,550	1993 1994
Extinguishers	Training in recharge and servicing	0,5 MT (25%)	11,550	1993
Refrigeration maintenance	Training in recharge and servicing	45 MT (32%)	13,200	1993 1994 1995
Industrial and commercial refrigeration	Training in alternative technologies	2 MT (20%)	15,950	1993 1994
Air conditioning	Training	0,5 MT (25%)	13,200	1993 1994
Air conditioning and refrigeration	Preinvestment study		16,500	1993 1994
Solvents	Training	5 MT (37,6%)	11,000	1993 1994
Estimated totals		95 M.T. (30%)	136,950	

PROJECTS TO BE EXECUTED

3.2.2 Institutional projects

68. Name of project:

Government Commission on the Ozone Layer (COGO)

Years: 1993-1996

Project description:

i) Identification of the problem.

Need for creation and functioning of a Government Commission on the Ozone Layer, COGO. Institutional agency answering directly to the Government for commitments undertaken by the Republic of Uruguay.

ii) Project objectives:

Creation and functioning of COGO, which fulfils the following objectives:

1. To provide technical assistance to the Ministry of Housing, Land-Use Management and the Environment, in those areas covered under the Montreal Protocol.
2. To coordinate and control the implementation of the plan of action on the implementation of the country programme.
3. To propose draft technical and legal norms to ensure the fulfilment of the obligations assumed by the State pursuant to its adoption of the Montreal Protocol and the implementation of the country programme.
4. To define the terms of reference that are necessary for the implementation of projects covered under the country programme.
5. To provide technical support to the other agencies involved.
6. To coordinate with public institutions and private social organizations in the areas of their competence, in order to stimulate participation of the various sectors of society.
7. To encourage the conclusion of agreements with the various sectors of public and private activity.
8. To report on a quarterly basis to agencies designated under the Protocol, progress on the implementation of the

programme, as well as activities and consumption statistics on controlled substances,

9. To invite tenders and select the necessary executing agencies for fulfilment of the country programme.

- iii) Relevant Government actions in connection with the project:

The Government shall be responsible for offices, secretariat services and domestic communication.

Anticipated results:

Supervision of the commitments to achieve a 95 M.T. reduction.
Project implementation period:

Years 1993-1994-1995

Estimated costs, COGO

ITEM	1993	1994	1995	TOTAL US \$
Human resources	21,000	21,000	21,000	63,000
Engineer 1	13,000	13,000	13,000	
Engineer 2	8,000	8,000	8,000	
Infrastructure	10,000			10,000
Operations	6,000	6,000	6,000	18,000
Total	37,000	27,000	27,000	91,000

Description of costs:

Human resources:

Engineer 1: per month US\$ 1,000 x 13 months US\$ 13,000
Engineer 2: per month US\$ 616 x 13 months US\$ 8,000

These costs in human resources are incremental. The fixed portion is the contribution of the Government.

The Government shall also provide the agency for the dissemination of information and the facilities of the Ministry for contact with the press, as well as legal assistance.

Infrastructure:

Includes: Installation of computing equipment, a laser printer and
fays. US\$10,000

Other office requirements such as physical space, telephones, desks, etc. shall be provided by Government.

Operations:

Envisages US\$500 per month for international communications, postage, etc.

Other expenses such as paper and national communications shall be provided by Government.

For this reason each project has incorporated the respective operational expenses, including translations, organizational events and leaflets.

70. COHERENT REGULATIONS AND LAWS

Name of project:

Changes in regulations and laws.

Project description:

i) Identification of the problem.

A decentralized body of laws concerning the ozone layer exists in various ministries, including the Ministry of Agriculture (methyl bromide), the Ministry of Industries, Environmental Health, etc.

Various regulations and laws have also been enacted at the national and municipal levels. It is therefore now necessary to systematize the current laws and to propose a body of other laws that is consistent with the commitments undertaken.

ii) Project objectives:

Adoption of necessary changes in the legislation in force which are consistent with the intention to phase out the consumption of controlled substances.

1. Systematization of legal provisions in force.
2. Analysis and discussion of proposed changes.
3. Drafting of new legislation.

The project shall be subject to invitations to tender.

iii) Relevant action to be taken by Governments with respect to this project:

- Coordination with the private sector.
- Coordination between the different ministries.
- Implementation of the legal changes recommended by the study.

Anticipated results:

Report on the legal changes required to be made by the executive and legislative powers.

Effecting of the normative and legal changes that are consistent with the country programme.

Project implementation period:

Local study: 1993

Completion of final report: first quarter of 1994.

Cost of estimated changes in norms and laws.

ITEM	1993	1994	TOTAL \$US
Human resources	3,500	5,500	9,000
Attorney 1	2,000	4,000	
Assistant 1	1,500	1,500	
Material resources	1,000	2,000	3,000
Sub-total	4,500	7,500	12,000
Unforeseen expenditure	450	750	1,200
Total for project	4,950	8,250	13,200

Description of costs:

Progress report for 1993, for initiation of research on existing dispersed legislation and legal norms. 37.5 per cent of budgeted resources.

71. Name of project: Public awareness campaign

This project seeks to develop both general initiatives and initiatives focused on specific sectors, such as repair and service workshops, with concise leaflets describing the new technologies and explaining the proposed phasing out of CFC's.

It will also disseminate information among young people and other sectors which are sensitive to the depletion of the ozone layer. This accounts for the administrative costs attached to the project.

In addition, it is intended to "tender out" this activity, so that a firm which is specialized in communication services would design and execute the tasks of dissemination, improving the return on expenditure per contact, and influencing demand. For this reason, the project is not included in the operational costs of the COGO.

Project description:

i) Identification of the problem.

There is need to build more specialized capacities in different sectors of the community, in the productive sector, the communications media, and in those sectors that are sensitive to the problem of the ozone layer. Information on the Montreal Protocol must also be disseminated.

ii) Objectives of the project:

To provide technical knowledge to the industrial, trade and other sectors of public opinion about the implications of the damage to the ozone layer and its consequences for human, animal and plant life, in such a way as to consolidate the changes in the preferences of consumers on the one hand, and to promote substitution and savings in the use of ODS, on the other.

1. To inform and sensitize public opinion and the productive sectors to the significance of the Protocol, the implications of the depletion of the ozone layer, and the progress of substitution technologies.
2. To design and distribute explanatory leaflets.
The project will be subject to an invitation to tender.

iii) Relevant Government action in connection with the project:

Reporting on the measures and actions taken by Uruguay.
Informing public opinion and using other appropriate communications media to fulfil this objective.

Elaboration of terms of reference for the invitation to tender for the campaign.

Providing technical information to the winners of the tenders for the publicity campaign.

Anticipated results:

Influencing the demand for and use of ODS.

Project implementation period:

1993. Invitation to tender. Logo and campaign design.
Technical leaflets for industrial sectors.
Dissemination of video for design of campaign.

1994 and 1995. Continuation of campaign. Modifications in design based on the results and requests from the sectors concerned.

Estimated costs of the public dissemination campaign.

ITEM	1993	1994	1995	Total US\$
Preparation of campaign	13,000	5,000	5,000	23,000
Educational leaflets	5,000	5,000	5,000	15,000
Communications media	20,000	10,000	10,000	40,000
Secr. & admin. costs	3,000	3,000	3,000	9,000
Total for project	41,000	23,000	23,000	87,000

Anticipated results:

To affect demand for products whose inputs of ODS have been reduced.

To stimulate the productive sector through the technological changes being introduced.

Project implementation period:

1993: Printing of Ozone seal and completion of adequate regulation. Examination of production processes to certify a final product as "ozone-friendly".

1994 - 1995. Launching of ozone-friendly certification.

Estimated costs of changes to the ozone certification seal.

ITEM	1993	1994	1995	TOTAL US\$
Production of seal	4,000			4,000
Study of design	3,000			
Regulation	1,000			
Printing	6,000			6,000
Dissemination	6,000	6,000	6,000	18,000
Follow-up	4,000	4,000	2,000	10,000
Sub-total	20,000	10,000	8,000	38,000
Unforeseen expenditure	2,000	1,000	800	3,800
Total	22,000	11,000	8,800	41,800

Note on costs:

This is the estimated cost of issuing invitations to tender in accordance with the terms of reference elaborated.

72. Name of project: Production of an ozone seal.

The implementation of this project will be done through an invitation to tender. Its objective is to coordinate with the private sector, related institutions and/or employers' trade associations.

The participation of certification companies, both public and private is essential, as well as the elaboration of the operational regulations for the application of the seal to national or imported products.

It is hoped that public awareness campaigns will create heavy pressure on the demand for and supply of products related to controlled substances.

It is these factors which explain why the budget for this project is not incorporated into the operational costs of the COGO.

Object:

Years: 1993 - 1995

Project description:

i) Identification of the problem.

ii) Objectives of the project: to introduce into the country an identification seal for ozone-friendly products.

The project should have the following objective activities:

1. Design of an attractive, ecological, ozone-friendly seal.
2. An effective public awareness campaign to encourage the choice of substances that do not deplete the ozone layer.
3. Design of a procedure for its distribution and acceptance by the public.
4. Integrate through this initiative the private sector and appropriate certification bodies.

The project shall be subject to an invitation to tender.

iii) Relevant Government actions in connection with the project:

Preparation of the terms of reference.

Ensuring greater dissemination of the objective through press campaigns.

Providing the necessary legal framework, in accordance with the proposal of the company whose tender is selected.

73. Name of the project: International advisory services.

Project description:

i) Identification of the problem:

Given the state of continuous change in the new substitution technologies for ODS, the Government should request expert technical assistance to ensure that the phasing out of consumption, in keeping with its commitments, is achieved or accelerated, if possible.

ii) Objectives of the project:

If the ongoing evaluations carried out by COGO and the Advisory Committee so determine, to create the conditions for requesting technical assistance for specific industrial sectors.

iii) Relevant Government action in connection with the project:

Quarterly evaluation of results.

Expected results:

Follow up and training in new technologies, in accordance with the needs of the country, with the assistance of international experts.

Project implementation period:

Years: 1994 - 1995

Estimated cost:

5 international consultancies	US\$8,000
1994: 3 consultancies	US\$24,000
1995: 2 consultancies	US\$16,000

3.2.3.INDUSTRIAL SECTOR PROGRAMMES

74. FLEXIBLE FOAMS. Category 1.

Name of project:

Training in the use of technologies and/or substitution in the manufacture of flexible foams.

Project description:

i) Identification of the problem.

Some industrial sectors require training in the optimum mix and possible use of substitutes for the manufacture of foams, without significantly reducing their quality and density. Applies to manufacturers of foam for mattresses.

The use of mixtures when CFC's are employed as thermal insulators also requires training in more efficient uses that would permit less loss of CFC substances.

ii) Objectives of the project:

Visit of an international expert for a training seminar in the practice of methods to reduce the use of CFC's, more efficient use and increased savings for the industries concerned, as well as information on substitution technologies.

iii) Relevant Government action in connection with the project:

Organizing the visit of the expert, with a specific work programme, which covers:

- Training of technicians in methods of thermal insulation for use in construction.
- Visit to the principal mattress factories.
- Seminar.

Public information campaign.

iv) Companies concerned:

Use: Expanding agent in flexible foams for use in mattresses.

COMPANY: DIVINO

Type of enterprise: Private limited liability company.

Market share: 80%

Use for densities of under 21, mixture of methylene chloride and CFC's in a proportion of approximately 80/20.

Various other smaller companies.

Use: Water-proofing and insulation with injected polyurethane.

COMPANY: METALIZADORA URUGUAYA

Type of enterprise: private

Market share: 50%

Use in mixtures with possible minimal in-plant loss of ODS. Greatest loss at time of application.

Anticipated results:

Potential reduction of 22 metric tons of CFC by the end of 1995 when phase-out projects are formulated and implemented. Training of at least 20 technicians in the sector of flexible foams, mainly as thermal insulation. Report of an expert in this area.

Project implementation period:

Organization of the visit and seminar: 1993.

Holding of the seminar: first quarter of 1994.

Agencies involved in implementation:

UNDP.

Estimated cost of project:

ITEM	1993	1994	TOTAL US\$
Foreign expert		8,000	8,000
Material resources	1,500	2,000	3,500
Equipment		6,000	6,000
Infrastructure		2,500	2,500
Sub-total	1,500	18,500	20,000
Unforeseen expenses	150	1,850	2,000
Total	1,650	20,350	22,000

Description of costs:

Visit of technical expert US\$8,000

1 week of visits to enterprises
3 day seminar
2 days public information campaign
(interviews in the media, etc.)

Materials US\$3,500

Preparation of materials and necessary
translations, visits to industries for preparation
of implementation phase US\$1,500
Preparation of leaflets, raw materials, and
necessary photocopies. US\$2,000

Equipment: US\$6,000

Estimated cost of equipment required for
demonstration purposes.

Infrastructure: US\$2,500

Travel and transportation US\$1,500
Cost of seminar US\$1,000
Other

75. RIGID FOAMS.

Name of project:

Technical assistance for substitution in the manufacture of rigid foams. Seminar and visits to enterprises.

Project description:

i) Identification of the problem.

Use of CFC's in rigid foams is for insulation in the manufacture of domestic and commercial refrigerators. Medium-sized enterprises in commercial refrigeration have access to limited information and their technologies are not the most advanced. The programme is mainly intended for such enterprises. A second industry exists in the sector with a high market share for domestic refrigerators. This industry is prepared to undertake training to identify areas for saving.

ii) Objectives of the project:

Mission of an international expert to visit industries and provide training in the practice of methods to reduce the use of CFC's, to improve use and savings for the industries concerned, and to provide information on substitution technologies.

iii) Relevant action by the Government in connection with this project:

Organization of the visit of the expert, with a specific work programme, which covers:

- training of technicians in enterprises
- visits to enterprises
- seminar

Public awareness campaign.

iv) Enterprises concerned:

INDUNOR et al.

Type of enterprise: Private, domestic refrigerators.

Market share: 75 per cent.

INDUNOR manufactures approximately 20,000 refrigerators annually. While losses during the manufacturing process are estimated to be minimal, the company would welcome a working seminar on the subject of foams.

TYPSA.

Type of enterprise: private, commercial refrigeration.

Market share: 30 per cent.

Anticipated results:

Potential 11 ton reduction in use of CFC's by the end of 1995 when phase-out projects are formulated and implemented.

Training of at least 10 technicians in the sector.
Report of an expert in the field.

Project implementation period:

Organization of the visit and seminar: 1993

Holding of the seminar: first quarter of 1994

Agencies involved in implementation:

UNDP

Estimated cost of project:

ITEM	1993	1994	TOTAL US\$
Foreign expert		8,000	8,000
Material resources	1,500	2,000	3,500
Equipment		6,000	6,000
Infrastructure		2,500	2,500
Sub-total	1,500	18,500	20,000
Unforeseen expenses	150	1,850	2,000
Total	1,650	20,350	22,000

Description of costs:

Visit of technical expert US\$8,000

2 weeks - visits to enterprises
3 days - seminar
2 days public awareness campaign
(interviews in the media, etc.)

Materials US\$3,500

Preparation of materials and necessary
translations, visits to industries for
preparation of implementation phase US\$1,500

Preparation of leaflets, raw materials,
necessary photocopies US\$2,000

Equipment: US\$6,000

Estimated cost of equipment required for
demonstrations

Infrastructure: US\$2,500

Travel and transportation US\$1,500
Cost of seminar US\$1,000
Other

76. AEROSOLS. Category 1

Note:

Clarification of paragraph 4 of the commentary on the Uruguay country programme.

With regard to the consistency of this project, paragraph 47 indicates that consumption has effectively declined by approximately 30 tons in applications for 1991. For 1992, according to table 22, the distribution of use of aerosol substances in CFC 12 was 18 tons and in CFC 11 for medicinal uses, 5 tons. A project is proposed to reduce the use of CFC 12 by 50 per cent, with the essential use of CFC's estimated to be approximately 35 per cent of the 1992 consumption.

The enterprises that have voluntarily reduced their consumption are mainly those working with registered international brands which have required the worldwide substitution of propellant gas.

The market for the remaining manufacturers is quite small and scattered and is composed of small national laboratories. The project therefore provides for training in this sector as well as in industrial security. The incentives proposed are market mechanisms which would affect demand. In addition, it is proposed to work with supermarkets (the Government already has experience in this field) and the ozone seal to promote the choice of aerosols which do not damage the ozone layer.

76. AEROSOLS. Category 11.

Name of project:

Conversion of hydrocarbon propellant.

Description of project:

i) Identification of problem.

The use of CFC as an aerosol is in part essential and cannot be substituted. In certain other sectors of national industries, however, it will be possible with training to develop substitutes. Producers are small and scattered and the conditions must be created to promote substitution.

ii) Objectives of the project:

To promote the substitution of CFC as a propellant gas using any of the various existing replacements - hydrocarbons, mechanical mechanisms, etc. in small and medium-sized national industries.

The project covers substitution training by an international expert, as well as training by a local expert in industrial security.

iii) Relevant Government action in connection with this project:

Organization of the visit of an expert, with a specific programme of work, which covers:

- coordination with the local expert in industrial security
- identification of the enterprises and organization of the seminar
- training of technicians in enterprises
- visits to enterprises
- seminar

Public awareness campaign.

Ozone seal.

Anticipated results:

Potential reduction of 9 metric tons of CFC by 1995 when ODS phase-out projects are formulated and implemented.
Training of at least 20 technicians in the sector.
Report of an expert in the field.

Project implementation period:

Organization of the visit and seminar: 1993
Holding of the seminar: first quarter of 1994

Agencies involved in its implementation:

UNDP

Estimated cost of the project:

ITEM	1993	1994	TOTAL US\$
Panellists		5,500	5,500
Foreign expert		4,000	
National expert		1,500	
Material resources	1,000	500	1,500
Equipment		2,500	2,500
Infrastructure		1,000	1,000
Sub-total	1,000	9,500	10,500
Unforeseen expenses	100	950	1,050
Total	1,100	10,450	11,550

Description of costs:

Visit of technical expert US\$4,000
 3 day seminar
 2 days of visits to enterprises
 1 day public information campaign

Participation of national expert US\$1,500
 3 day seminar
 2 days of visits to enterprises
 1 day public information campaign

Materials US\$1,500
 Preparation of materials and related translations,
 visits to industries for preparation of implement-
 tion phase US\$1,000
 Seminar-related expenses US\$500

Equipment: US\$2,500
 Estimated cost of material required for demon-
 strations

Infrastructure: US\$1,000
 Cost of seminar US\$1,000

77. SERVICING OF FIRE EXTINGUISHERS. Category 1. Short term

Name of project:
 Recovery during recharging.

Description of project:

i) Identification of problem.

Reducing the loss of halons during recharging of fire extinguishing equipment, through proper training. Research into the process of recovery. This sector has been identified as a largely essential-use sector. (Bank of the Republic, other institutions with archives and significant documentation).

ii) Objectives of the project:

Training in conservation practices during the servicing and recharging of existing fire extinguishing systems in large enterprises.

The project provides for training by an international expert.

iii) Relevant Government action in connection with this project:

Organization of the visit of the expert, with a specific work programme, which includes:

- training of technicians in enterprises and in fire departments
- seminar

Public information campaign
Ozone seal.

iv) Enterprises concerned:

Tornay y Mori S.A.

Type of enterprise: Private, fire extinguishing equipment.

v) Other sectors concerned:

Technical department of the National Fire Service.

Anticipated results:

Expected 0.5 metric tons reduction in halons by 1995 when a detailed project is implemented.

Training of at least 5 technicians in the sector.

Report of an expert in the area.

Implementation period for the project:

Organization of the visit and seminar: 1993

Holding of the seminar: second quarter of 1994.

Agencies involved in the implementation:

UNDP

Estimated cost of training:

ITEM	1993	1994	TOTAL US\$
Foreign expert		4,000	4,000
Material resources	1,000	1,000	2,000
Equipment		2,500	2,500
Infrastructure		2,000	2,000
Sub-total	1,000	9,500	10,500
Unforeseen expenses	100	950	1,050
Total	1,100	10,450	11,550

Description of costs:

Visit of technical expert US\$4,000

- 3 day seminar
- 2 days visiting enterprises
- 1 day public information campaign

Materials US\$2,000

- Preparation of materials and related translations, visits to industries in preparation for the implementation phase US\$1,000
- Seminar-related expenses US\$1,000

Equipment: US\$2,500

- Estimated cost of materials required for demonstrations.

Infrastructure: US\$2,000

- Cost of seminar US\$2,000

78. SERVICING OF REFRIGERATION EQUIPMENT

MAINTENANCE OF DOMESTIC AND COMMERCIAL REFRIGERATION EQUIPMENT
Category 1

Name of project:

Training in methods of reducing CFC12 use during servicing.

Description of project:

- i) Identification of problem:
Reducing losses of CFC 12 during maintenance and encouraging recovery (servicing and recharging of existing domestic and commercial refrigeration systems).

- ii) Objectives of the project:
Provide training in methods of maintenance and servicing offered by workshops to users of domestic and commercial

refrigerators, particularly in the use of equipment for recovery.

Establish the technical bases for the installation of machinery for recovery and recycling during servicing.

The project contemplates training by an international expert.

iii) Relevant Government action in connection with this project:

Organization of the visit of an expert to ensure the effectiveness of training, given the dispersion of the workshops which will cover:

- Convening of monitors,
- Provision of training, through practical demonstrations of use
- Seminar

Public information campaign.

iv) Enterprises concerned:

Characteristics:

Although the service sector is decentralized, the concentration of distributors has created a capacity for communication and contact to facilitate the respective training.

REPLAST S.A. (Major distributor to small workshops)
FIRELECTRIC. Technical services.
INDUNOR. Technical services.

Type of enterprises: Private, limited liability companies.

Anticipated results:

Potential 45 metric tons reduction in CFC's by the end of 1995 when ODS phase-out projects are formulated and implemented.
Training of at least 20 technicians in the sector.
Report of an expert in the field.

Project implementation period:

Organization of visit and seminar: 1993
Holding of the seminar: first quarter of 1994.

Agencies involved in implementation:

UNDP

Estimated cost of training:

ITEM	1993	1994	TOTAL US\$
International expert		4,000	4,000
Material resources	1,000	1,000	2,000
Equipment		4,000	4,000
Infrastructure		2,000	2,000
Sub-total	1,000	11,000	12,000
Unforeseen expenses	100	1,100	1,200
Total	1,100	12,100	13,200

Description of costs

Visit of technical expert US\$ 4,000
 3 day seminar
 2 days visiting enterprises
 1 day public awareness campaign

Materials US\$ 2,000
 Preparation of materials and related trans-
 lations, visits to industries in preparation
 of implementation phase US\$1,000
 Seminar-related expenses US\$1,000

Equipment US\$ 6,000
 Estimated cost of 3 mobile machines required for
 demonstration purposes

Infrastructure: US\$ 2,000
 Cost of seminar US\$2,000

79. SERVICING OF REFRIGERATION EQUIPMENT
 INDUSTRIAL REFRIGERATION

Name of project:
 Re-engineering of refrigeration processes

Project description:

i) Identification of problem.
 Reducing losses of CFC 12 during maintenance and encouraging
 conversion to other refrigerant gases.

ii) Objectives of the project:
 Training in industrial refrigeration methods using alternative
 techniques to ODS in large installations.

The project covers training by an international expert.

iii) Relevant Government action connected with this project:
Organization of the visit of an expert to ensure the effectiveness of training. The mission will cover:

- visits to the principal industries
- provision of training through practical demonstrations of use
- seminar

Public information campaign.

iv) Enterprises involved:

Enterprises which provide technical services for large refrigeration equipment and enterprises which have their own technical maintenance services.

Anticipated results:

Potential reduction of 2 metric tons of CFC by the end of 1995 when ODS phase-out projects are formulated and implemented.
Training of at least 10 technicians in the sector.
Report on an expert in the field.

Project implementation period:

Organization of visit and seminar: 1993

Holding of seminar: first quarter of 1994

Agencies involved in implementation:

UNDP

Estimated cost of training:

ITEM	1993	1994	TOTAL US\$
International expert		8,000	8,000
Material resources	500	500	1,000
Equipment		4,500	4,500
Infrastructure		1,000	1,000
Sub-total	500	14,000	14,500
Unforeseen expenses	50	1,400	1,450
Total	550	15,400	15,950

Description of costs:

Visit of technical expert US\$ 8,000
 2 weeks of visits to enterprises
 3 day seminar
 2 day public information campaign
 (media interviews, etc.)

Materials US\$ 1,000
 Preparation of materials and related translations,
 visits to industries in preparation for implemen-
 tation phase US\$ 500
 Seminar-related expenses US\$ 500

Equipment: US\$ 4,500
 Estimated cost of 2 mobile machines for
 demonstration purposes

Infrastructure: US\$ 1,000
 Cost of seminar US\$ 1,000

80. SERVICING OF REFRIGERATION EQUIPMENT
 MAINTENANCE: AIR CONDITIONERS - Category 1.

Name of project:
 Recovery during installation, servicing and recharging.

Project description:
 i) Identification of the problem.
 Reducing losses of CFC during maintenance and encouraging
 recovery.
 ii) Objectives of the project:

Training in conservation practices during servicing and recharging of existing systems in large enterprises, for both mobile and fixed air conditioning units.

To establish the technical bases for the installation of equipment for recovery and recycling during servicing.

The project provides for training by an international expert.

iii) Relevant Government actions in connection with this project:

Organising the visit of an expert,

- convening of monitors
- conducting training courses through practical demonstrations of use
- seminar

Public information campaign

iv) Enterprises involved:

Characteristics: the vast majority of the market consumes HCFC 22. The enterprises concerned are:-

SINFAX, local representatives of Westinghouse, accounts for 96 per cent of the market for air conditioning equipment for buses and approximately 20 per cent of the market in air conditioning systems for automobiles.

In the case of central and window air conditioning units, the "Equipo" and Ing. Ulises Puig" companies have indicated that all the necessary equipment is imported and that less than 10 per cent of the total needs to be charged with CFC prior to use. Estimated consumption therefore largely corresponds to servicing requirements.

Anticipated results:

- 0.5 metric ton reduction in CFC use by the end of 1995.
- Training of at least 15 technicians in the sector.
- Report of an expert in the field.

Project implementation period:

- Organization of the visit and seminar: 1993
- Holding of the seminar: third quarter of 1994

Agencies involved in the implementation:

UNDP

Estimated cost of training:

ITEM	1993	1994	TOTAL US\$
International expert		4,000	4,000
Material resources	1,000	500	1,500
Equipment		5,000	5,000
Infrastructure		1,500	1,500
Sub-total	1,000	11,000	12,000
Unforeseen expenses	100	1,100	1,200
Total	1,100	12,100	13,200

Description of costs:

Mission of technical expert US\$ 4,000
 3 day seminar
 2 days visiting enterprises
 1 day public information campaign

Materials US\$ 1,500
 Preparation of materials and related translations,
 visits to industries in preparation for the imple-
 mentation phase US\$ 1,000
 Seminar-related expenses US\$ 500

Equipment US\$ 5,000
 Estimated cost of 2 mobile machines for demon-
 stration purposes.

Infrastructure: US\$ 1,500
 Cost of seminar US\$1,500

81.PRE-INVESTMENT STUDIES FOR THE RE-ENGINEERING OF EQUIPMENT
 Category II. AIR-CONDITIONING AND REFRIGERATORS

Name of project:

Pre-investment study in the sector. Existing data and conversion
 costs for elaboration of programme for the financing of
 technological re-engineering.

Year: 1993-1994

Anticipated results:

Investment base for technology change in the area of air-
 conditioning and refrigeration.

Project description:

Implementation of projects described below in the area of hotels, large buildings and meat enterprises, as well as in the shipping sector.

1. Register of equipment, value and useful life remaining.
2. Evaluation of technical alternatives to re-engineering and/or retrofitting with transitional chemical substances.
3. Cost-benefit analysis to determine feasibility of substitution, repair and/or replacement of equipment and substances.

Relevant actions of Government:

Pre-investment study.

Estimated cost:

ITEM	1993	1994	TOTAL US\$
Human resources	6,000	6,000	12,000
External expert	4,000	4,000	
Local expert	2,000	2,000	
Material resources	2,000	1,000	3,000
Sub-total	8,000	7,000	15,000
Unforeseen expenses	800	700	1,500
Total	8,800	7,700	16,500

82. SOLVENTS

CATEGORY I

Name of project:

Technical conversion of C CL4, MCF and CFC 114.

Project description:

- i) Identification of problem.
Need for technical assistance in substitution.
- ii) Project objectives:
Training seminar for the principal users of solvents capable of substitution.

The project provides for the training of monitors by an international expert.

- iii) Relevant Government action in connection with this project:

Organization of a visit by experts to guarantee the effectiveness of training. Mission includes:

- Visit to main industries.
- Training course.
- Seminar.

- iv) Enterprise concerned:
Laboratorios Equity y Credinvert S.A.

Anticipated results:

Training of at least 10 technicians in the field.
Report of an expert in the field.

Project implementation period:

Organization of the visit and seminar: 1993.
Holding of seminar: fourth quarter of 1993.

Agencies concerned in the implementation:
UNDP

Estimated cost of training:

ITEM	1993	TOTAL US\$
Foreign expert	8,000	8,000
Material resources	1,000	1,000
Infrastructure	1,000	1,000
Sub-total	10,000	10,000
Unforeseen expenses	1,000	1,000
Total	11,000	11,000

Description of Costs:

Visit of technical expert US\$ 8,000
Visits to enterprise - 2 weeks
Seminar - 3 days
Public awareness campaign
(media interviews, etc.- 2 days

Materials US\$ 1,000

Preparation of materials and related translations, visits to industries for preparation of execution phase	US\$500
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Seminar-related expenses	US\$ 500
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Infrastructure	US\$ 1,000
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Costs of seminar	US\$ 1,000
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83. These projects are expected to have an initial duration of three years, with execution beginning in mid-1993 and with national coverage including the participation of all agencies involved. The necessary technical assistance will be requested through the executing agencies of the Multilateral Fund.

84. In order to assimilate the new refrigeration and air-conditioning technology which is currently gaining ground through the Montreal Protocol, it is hoped to implement the national training programme for technical personnel and other staff who are in one way or another involved in this activity.

3.3 Agencies involved in the implementation of the strategy

85. The National Environmental Agency of Uruguay, through the COGO, will convene the agencies participating in the implementation of this strategy:

Ministries of Industry and Energy, Education and Culture, Public Health, and Economy and Finance.

Chamber of Industries, affiliates in relevant subsectors.

Technological Laboratory of Uruguay.

National Fire Service.

3.4 Timetable and impact on consumption.

86. Profile of gradual phasing out of CFCs under the Protocol.

The following table shows the possible projections of national consumption demand up to the year 2010.

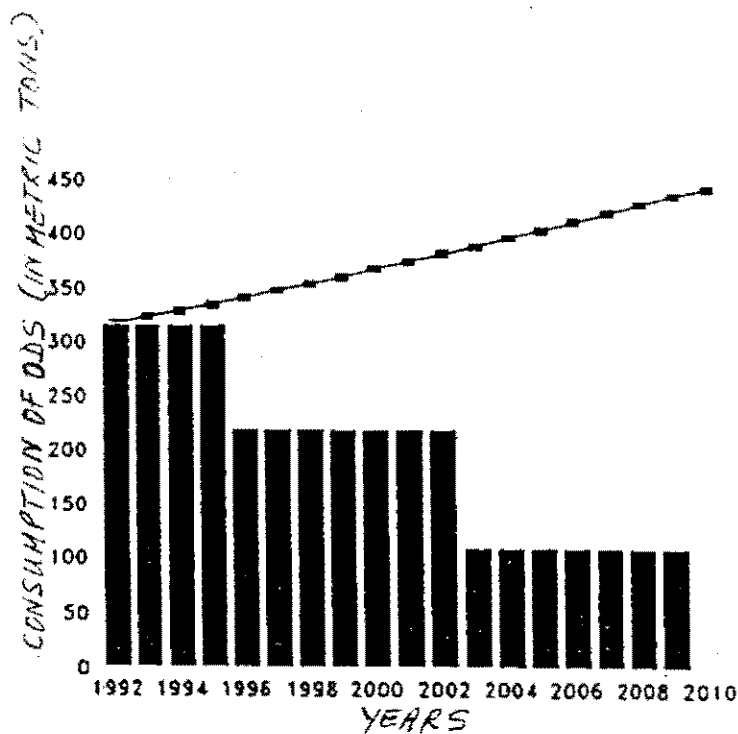
3.5 Priorities in project financing:

87. It is estimated that this country programme, which aims to achieve a 30-per-cent reduction in current consumption over three years, is for the financing of category I projects, that is to say, short-term projects, which means that they should be implemented primarily in the industrial sector and that, in order to ensure proper execution, the institutional sector should be strengthened.

3.6 Monitoring of agreements:

88. The Government of the Eastern Republic Of Uruguay, through the National Environmental Agency, will establish a quarterly review system to ensure the fulfilment of this programme, using the supervisory and control mechanisms already existing in the agencies involved.

It will supervise: annual consumption of ODS in the country, the extent to which consumption is lower than the limits established under the Protocol, the effectiveness of Government measures in terms of the achievement of the anticipated results, and the implementation of the projects under the plan of action. All of this will be reported to the Fund periodically.



ANNEXES

A1.

Consumption 1986 (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11	0	53.82	0	53.82	1.0
CFC 12	0	262.89	0	262.89	1.0
CFC 113	0	N/D	0	N/D	0.8
CFC 114	0	N/D	0	N/D	0.6
CFC 115	0	N/D	0	N/D	
Remainder	0	13.6	0	13.6	
TOTAL	0	330.35	0	330.35	

Note: N/D means that the remaining CFC do not appear in disaggregated form in importation codes. In its aggregated form it is listed under "other substances".

Nevertheless the National Environmental Agency based its estimates of the form of disaggregation of the remaining consumption on existing monthly data. This estimate, despite some lack of consistency, may be considered the best estimate for 1986, having regard to the available data.

A.2 Estimated consumption for 1986. (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11		53.82	0	53.82	1.0
CFC 12	0	262.89	0	262.89	1.0
CFC 113	0	5.6	0	5.6	0.8
CFC 114	0	1.6	0	1.6	0.6
CFC 115	0	0.0	0	0.0	
Total Group 1	0	323.88	0	323.88	
Group 2					
Halon 1211	0	4.9	0	4.9	3.0
Halon 1301	0	1.5	0	1.5	10.3
TOTAL	0	330.35	0	330.35	

A.3

Consumption 1987 (in metric tons)

Substance	Production	Imports	Exports	Consumption	PDO
Group 1 Annex A					
CFC 11	0	72.30	0	72.30	1.0
CFC 12	0	61.35	0	61.35	1.0
CFC 113	0	N/D	0	N/D	0.8
CFC 114	0	N/D	0	N/D	0.6
CFC 115	0	N/D	0	N/D	
Remainder	0	n.a.	0	n.a.	
TOTAL	0	133.65	0	133.65	

Note: No information is available on the consumption of other ODS's and we have not considered the 1987 data in our estimates of current consumption, since they are not consistent with historical trends and no exogenous element exists to explain the drop in consumption on a single occasion in that year. We therefore conclude that the data compilation for 1987 did not reflect actual consumption.

A.4

Consumption 1988 (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11	0	95.18	0	95.18	1.0
CFC 12	0	322.16	0	322.16	1.0
CFC 113	0	N/D	0	N/D	0.8
CFC 114	0	N/D	0	N/D	0.6
CFC 115	0	N/D	0	N/D	
Remainder	0	22.32	0	22.32	
TOTAL	0	439.66	0	439.30	

Note: N/D means that the remaining CFC do not appear in disaggregated form in importation codes. In its aggregated form it is listed under "other substances".

A.5

Consumption 1989 (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11	0	97.66	0	97.66	1.0
CFC 12	0	423.30	0	423.30	1.0
CFC 113	0	N/D	0	N/D	0.8
CFC 114	0	N/D	0	N/D	0.6
CFC 115	0	N/D	0	N/D	
Remainder	0	13.01	0	13.01	
TOTAL	0	534.00	0	534.00	

Note: N/D means that the remaining CFC does not appear in disaggregated form in importation codes. In its aggregated form it is listed under "other substances".

A.6

Consumption 1990 (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11	0	97.65	0	97.65	1.0
CFC 12	0	310.65	0	310.65	1.0
CFC 113	0	N/D	0	N/D	0.8
CFC 114	0	N/D	0	N/D	0.6
CFC 115	0	N/D	0	N/D	
Remainder	0	21.45	0	21.45	
TOTAL	0	426.75	0	426.75	

Note: N/D means that the remaining CFC does not appear in disaggregated form in importation codes. In its aggregated form it is listed under "other substances".

A.7 Estimated consumption for 1991 (in metric tons)

Substance	Production	Imports	Exports	Consumption	ODS
Group 1 Annex A					
CFC 11		97.65	0	97.65	1.0
CFC 12	0	310.65	0	310.65	1.0
CFC 113	0	7.23	0	7.23	0.8
CFC 114	0	2.07	0	2.07	0.6
CFC 115	0	0.0		0.0	
Total Group 1	0	417.7	0	417.7	
Group 2					
Halon 1211	0	1.5	0	1.5	3.0
Halon 1301	0	0.5	0	0.5	10.0
TOTAL	0	419.7	0	419.7	

Estimated consumption for 1991.

Background:

The last year of consumption considered was 1990.

The 1986 estimates were compared with the data provided by importers of halons.

Sources used:

- (a) Ministry of Industry, Industrial and Technological Information Services.
- (b) Interviews with users and importers.
- (c) Historical data obtained by the National Environmental Agency.

A.8 Important measures already taken by the Government.

The Government of the Eastern Republic of Uruguay ratified the Protocol of Montreal in January 1991. The Amendments to the Protocol is currently being prepared prior to submission to the Chamber of Deputies. Interviews with the Legislative Branch show that there is an intention to ratify the Amendments as soon as they are presented to the Executive Branch.

On 2 September 1991, the relevant breakdown for ozone-depleting substances was published in the Official Gazette under the New Customs and Import Duties Nomenclature (NADI).

- 29.02.01.11 Trichlorofluoromethane
12 Dichlorofluoromethane
13 Other chlorofluoromethanes
14 Trichlorotrifluoroethane
15 Dichlorotetrafluoroethane
16 Monochloropentafluoroethane
17 Monochloromonobromodifluoromethane
18 Monobromotrifluoromethane
19 Dibromotetrafluoroethane
- 38.19.89.62 Mixtures of chlorofluoromethanes
containing trichloromonofluoromethane or
dichlorodifluoromethane
63 Other mixtures of chlorofluoromethane
64 Mixtures containing methane or ethane halogens
included under items 29.02.01.14 to 19.

A.9 PERSONS CONCERNED WITH THE SUBJECT OF THE OZONE LAYER.

Minister of Housing, Land-Use Management and Environment of Uruguay

Mr. Manuel Romay

Address: Zabala 1427. Montevideo

Telephone: 96.39.89

Fax: 96.29.14

Technical Government Commission on the Ozone Layer. COGO.

Mr. Luis A. Santos Michetti

National Environmental Agency

Address: Zabala 1427. Montevideo

Telephone: 96.39.54

Fax: 96.51.32

Miss Miriam Vega Pintos

National Environmental Agency

Address: Zabala 1427. Montevideo

Telephone: 96.39.54

Fax: 96.51.32

Senate Commission on the Environment

President Leopoldo Bruera

Address: Senate of the Eastern Republic of Uruguay

Telephone: 29.01.46

Fax: 29.70.11

Commission on the Environment of the Chamber of Deputies

Deputy Juan Justo Amaro

Address: Deputies of the Eastern Republic of Uruguay

Telephone: 40.00.23

40.91.11 Ext. 367

Ministry of Public Health, Division of Environmental Health

Dr. Teresita Fracchia

Address: Durazn 1242.

Telephone: 98.24.71

National Fire Service, Technical Department

Commissioner Washington Cortazzo

Address: Colonia 1665

Telephone: 40.90.71/74

Fays: 40.11.44

Bank of the Republic, Technical Division of Imports

Mr. Victor Cristar

Address: Cerrito y Zabala

Telephone: 95.21.13

Ministry of Cattle Farming, National Institute of Mea

Mr. Bartolomé Colón

Address: Rincón 549.

Telephone: 96.19.89/96.04.30

Fays: 96.29.33

PRIVATE SECTOR

Chamber of Industries of Uruguay. Commission on the Environment

Chairman of the Commission, Mr. Armen Chamyan

Address: Av. Lib. Brig Gral Lavalleja 1672. Montevideo.

Telephone: 90.19.41; 90.19.42; 92.34.02

Fays: 92.25.67

ICI Uruguay S.A.

Assistant Manager. Mr. Guido C. Melani

Address: Br. Gral Artigas 2029. Montevideo.

Telephone: 40.96.08; 40.78.82; 41.61.11

Fays: 40.01.95

ORBEN S.A. Local representatives of DUPONT

Department of Freon and Photographic Products. Mr. Carlos Gutierrez

Address: Rincon 531 of. 701. Montevideo
Telephone: 96.02.04; 96.00.72; 96.00.73
Fays: 96.20.74

Tornay y Mora S.A. Sector of Fire Extinguishing Equipment
Marketing Manager - Mr. Enrique Clerici
Address: Juan Ma. Guiterrez 3615. Montevideo.
Telephone: 39.01.86; 39.67.52.
Fays: 35.44.91

Divino S.A. Foam Sector
Production Manager - Mrs. Mary Postiglione Mild.
Address: Cno. Carrasco 6405. Montevideo
Telephone: 60.74.27.
Fays: 60.74.27

TEM S.A. Domestic Refrigeration Sector
Foreign Trade Manager - Miguel A. de Leon
Address: Cno. Carrasco 5975.CP 12100
Telephone: 52.05.96
Fays: 52.03.14

BROMYROS S.A. Commercial Refrigeration Sector
Mr. George P. A. Thomsen, Partner
Address: Pedro Cosio 2330. Montevideo
Telephone: 55.13.20
Fays: 52.13.56

REPLAST S.A. Sector of Industrial and Commercial Refrigeration
Director - Mr. Carlos Hernandez Cabrera
Address: Santa Fe 1134. Montevideo
Telephone: 20.15.78; 20.13.59
Fays: 29.92.10

INDUNOR S.A. Domestic Refrigeration Sector. Local representative of
General Electric.
Mr. Pedro Vilanova, General Manager of Electrical Appliances
Department
Address: Defensa 1926 - 11800. Montevideo.
Telephone: 40.91.01; 40.91.02; 40.91.03
Fays: 49.86.59.

ANTON RONN Y CIA LTDA. Shipping Cargo
Mr. José Edgard Silvera, Manager
Address: Cerrito 420. esc 414. Montevideo
Telephone: 95.55.80; 95.55.35
Fays: 96.35.57

SINFAX. Air-Conditioning Sector
Director
Mr. Orlando Treglia
Address: Rondeau 1878

Telephone: 94.06.00

CREDINVERT S.A. Solvents
Mr. Eduardo Gils, Adviser
Address: Av. Burgues 3360
Telephone: 20.70.27

LABORATORIOS EQUITY. Solvents
Director, Mr. Justino González
Address: Av. Italia 3930.
Telephone: 56.57.12;56.23.60

BICSA. Air-conditioning Sector
Director, Mr. Frederico Cvetreznik,
Address: Piedras 575.
Telephone: 96.23.07;96.26.95

TERRY. Aerosols
Director, José Rapsetin
Address: Av. Rivera 3270.
Telephone: 62.01.53; 62.05.38
Fays: 62.05.60

A.10 LETTER FROM THE CHAMBER OF INDUSTRIES OF URUGUAY ADDRESSED
TO THE AUTHORITIES OF THE EXECUTIVE COMMITTEE OF THE MULTILATERAL
FUND OF THE MONTREAL PROTOCOL

Attached is a copy of the above-mentioned letter, which
expresses the support of the Chamber of Industries on matters
related to the phasing out of consumption of substances controlled
under the Protocol.