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From: "Carlos Andres Hernandez" <cahernandez@minambiente.gove.co>
To: <Ozoneinfo@unep.org>
Subject: Oz.Sec./MP/Dec.X/7 - National Halon Plan - Colombia
Date sent: Tue, 11 Jul 2000 12:24:36 -0500
Organization: Ministry of the Environment

Honorable Sir:

In accord with the letter Oz.Sec./MP/Dec.X/7 of 18 February 2000, I am sending you the national halon management plan.

I hope you find this information very useful, and that you will not hesitate to contact us with any additional comments you may have.

Cordially,

ANDRÉS HERNÁNDEZ A.

NATIONAL HALON MANAGEMENT STRATEGY

Introduction

The participation of Colombia in the Protocol dates from the introduction of the Country Programme. The Country Programme was presented to the Executive Committee of the Fund on 18 January 1994. Colombia was accepted as an Article 5 Party to the Protocol, by means of Law 29/92, Declaration of Feasibility C-379/93, enjoying the benefits and adhering to the commitments that this implies. Simultaneously, a project for institution strengthening was approved for implementing the action plan presented under the Country Programme, which was known as the Ozone Technical Unit (OTU).

The Unit is a group of professionals from diverse disciplines with an emphasis on care of the environment, and began to operate officially in March 1994 when the project was approved. The OTU is responsible for identifying companies that can participate in projects to convert from ozone-depleting substances (ODSs) to non-harmful substances, and participates in the proper execution and completion of approved projects. It is also responsible for providing assistance to the Colombian Government in the elaboration of policies for the regulation of ODS consumption in the country and for promoting awareness among the population of the problem of depletion of the atmospheric ozone layer. The unit is deployed under the direction of the Vice-Minister for Environmental Policy and Regulation of the Ministry of the Environment, Luis Fernando Gaviria Trujillo.

According to the data presented by the Country Programme, the greatest consumer of ozone-depleting substances is the domestic and commercial refrigeration servicing industry, accounting for 43 per cent of consumption. This figure is followed by the manufacturing sectors for commercial refrigeration (16 per cent), foam (12 per cent), and domestic refrigeration (11 per cent) el consumo de halones (11 per cent), and others (7 per cent). For Colombia, the word "consumption" means the quantity of ozone-depleting substances imported less the amount exported, since these substances are not manufactured in the country.

Since then, Colombia has implemented projects -- through donations by the Multilateral Fund for the Implementation of the Montreal Protocol -- that benefit private industry by funding re-tooling to utilize alternative technologies. In this area, approximately \$10 million has been approved by the Protocol for the purchase of equipment in the commercial and domestic refrigeration, foams, refrigeration servicing and mobile air-conditioning sectors, for the total elimination of 1000 tonnes of ozone-depleting potential. Industrial re-tooling, accompanied by national regulations, has reduced the present consumption of ozone-depleting substances by 47 per cent from the 1995 total.

Halons in Colombia

In Colombia today, information on the consumption of ozone-depleting substances is provided by the National Taxes and Customs Authority. This information reflects the quantity of imports and exports of ozone-depleting substances as reported on customs certificates. Since 1995, there has been no importation of these substances, according to the official report of the National Taxes and Customs Authority.

Since the passage by the Ministry of Foreign Trade of Resolution 004, which establishes a license requirement for the import of halons, the installation of portable and fixed fire extinguishing systems has been gradually eliminated. Nevertheless, fire extinguishing systems already in place are allowed to remain. Since it is a halon management plan, it lists all activities to reduce halon consumption up to the deadline for Article 5 countries, of which Colombia is one, and by the year 2010 the consumption of halons should be reduced by 100 per cent.

Elimination Strategy

Consumption of halons in Colombia has fallen to levels near zero, thanks to disincentives to their importation. The principal disincentive is the need to negotiate an import license, which has caused the principal suppliers to stop using halons and has spurred the utilization of alternative substances.

Substitutes

There is presently a drive toward use of alternative substances in the installation of fire-extinguishing systems, which can be seen to be growing due to the involvement of distributors of such equipment, who promote the use of the alternatives.

Halon use

The OTU has made a show of discouraging the use of halon, while at the same time promoting the maintenance of the equipment in order to avoid accidental leaks or discharges. At the same time, the use of halons in new installations is discouraged by those same distributors who see halon-based systems as a problem and not a solution.

Elimination target date

Taking into account that since 1995 no halon-based fire extinguishing systems have been installed, it is hoped that by 2005 the entire stock of halon in the country will be consumed and halon-based systems will be converted for use with alternative substances.

Goal of a halon management plan (HMP) in the country

To carry out the functions of the Unit, allowing the integrated management of halons in the country by preventing the intentional or unintentional release of ozone-depleting substances with the highest ODP. (Decision X/7: Halon-management strategies).

The halon management plan should contemplate not only activities to reduce total consumption, as has already been the case, but should also provide for the management of the existing halon stocks in the country. For this reason, the activities that could be incorporated into the project for the realization of the HMP are:

- Execution of a halon management plan, enlarging on the survey carried out by OTU.
- Dissemination of information, directed to consumers and distributors and fire protection agencies and associations, on the appropriate use of existing halon stocks. "Many say that they understand the Montreal Protocol to require the elimination of the consumption, not the use, of halon. A common misconception is that all uses of halon should be immediately eliminated. In the absence of better information, some companies are converting or replacing halon systems that could continue to function appropriately with proper maintenance. "Report to UNEP by the ICF Consulting Group on the Colombian Situation"

Halon survey

A survey was carried out in the first half of 1999 with the aim of quantifying existing halon stocks and evaluating both their present management and potential projects by the Fund relating thereto. The data provided by halon distributors were in turn revised with the data gathered in surveys directed at halon users. This information has a low margin of error and can be used as a factor in developing a future HMP. There is a minimum of 186 tonnes of ozone-depleting potential in the country contained in fixed and portable systems. Following is a description of the methodology and other details of this survey.

National Halon Management Strategy

Methodology

The survey was carried out with the assistance of the Colombian Security Council (CSC), which provided a list of businesses possibly in possession of halon based fire fighting systems. CSC is a non-profit making organization representing approximately 450 private companies that receive advice from CSC in the areas of occupational health, industrial security and environmental protection.

Surveys were utilized (see annex I) to collect the information due to the large number of participating businesses. The surveys were carried out by the two entities (the Ministry of Environment and CSC).

Coverage of the survey

One-hundred and seventy eight firms, both consumers and distributors, were selected for the study. The survey was distributed to 124 firms from all over the country, of which 82 completed and returned it. Some firms presented separately information pertaining to some of their factories, for which they responded. For ease of managing this information, these plants are presented as new firms, which brings the total number of businesses that provided information to 125.

Industrial sectors were selected to include all industrial activities in the country. Table 1 shows the coverage achieved in the various sectors (not including factories).

Table 1: Coverage by industrial sector

Industrial Sector	Companies Selected	Companies Contacted	% Covered	Completed Surveys	% (of surveys sent)	% (of total companies)
Petroleum	17	14	82.35	11	78.57	64.71
Air Services	6	6	100	3	50	50
Banking	9	8	88.89	7	87.50	77.78
Telecommunications	7	5	71.43	4	80	57.14
Energy	18	5	71.43	4	80	57.14
Food	10	8	80	7	87.50	70
Chemicals	28	19	67.86	12	63.16	42.86
Super-markets and shopping centers	4	4	100	4	100	100
Paper, textiles and wood	8	7	87.50	6	85.71	75
Hotels, Universities and Hospitals	8	5	62.50	3	60	37.50
Metallurgy	6	2	33.33	4	200	66.67
Other	34	21	61.76	9	42.86	26.47
Distributors	23	20	86.96	11	55	47.83
TOTAL	178	124	69.66	82	66.13	46.07

Efforts were made to give the survey the broadest national coverage possible. Coverage by city is shown in Table 2 (including factories).

Table 2: Coverage by city

City	Number of companies	% of total
Bogotá	8	39.20
Barranquilla	8	6.40
Cali	4	3.20
Cartagena	4	3.20
Medellín	3	2.40

Soacha	4	3.20
Barrancabermeja	2	1.60
Pereira	2	1.60
Others	19	15.20
Not reported	30	24.00
TOTAL	125	100.00

Tabulation

The information provided by the different firms and distributors was organized in two different ways: the first by substance consumed; and the second by industrial sector.

Difficulties with the survey

The principal difficulties in carrying out this survey were:

- The large number of businesses that use fire fighting equipment. This meant that the number of businesses chosen for the survey was only a small fraction of the number in the country.
- The lack of interest shown by the firms, many of which had changed names and therefore felt no need to respond. Others lacked the time needed to respond (Eka Chemicals of Colombia) and others never responded.
- A failure of collaboration on the part of the distributors, who feared punishment, believing that halon is prohibited, and therefore did not answer the survey truthfully. Others expressed great interest in the survey, but failed to respond to it.
- Minimal collaboration by the CSC, whose assistance was limited to contacts in ACOPI [the Association of Small and Medium-size Industries} and the invitation to the congress. The list of companies was outdated, and some of the contacts no longer worked in the companies.
- Limited interest shown by some distributors and businesses.

Conclusions

With the information gathered so far, certain conclusions can be drawn, from which one can extrapolate to paint a national panorama.

- Halon use. The principal uses of halon occur in the following sectors:
 Petroleum
 Banks
 Telecommunications
 Energy generation
 Manufacturing
- Distributors. They stopped importing halon and halon-based fire fighting systems in approximately 1994, which has helped many businesses in their efforts to switch to halon substitutes such as HCFC-123 (commercial name Solkaflan-123), CO₂, dry chemical powder (Polvo Químico Seco (PQS)) or FM-200.

Distributors have a slightly erroneous view of halon regulation, believing that halon is prohibited, and neither do they have a clear idea of the concept of prior licensing. As a result, they advise their clients to change their halon-based extinguishers for others, when there is no need to do so.

Some have halon stored up in their warehouses to keep their customers supplied (the quantities of these stored halons are specified in the following paragraph).

- Storage. Some distributors and businesses have stocks of halon in their warehouses, of both 1211 and 1301 (1050 kg and 3435 kg, respectively). Others report no such stocks. Table 3 shows the quantities of stored halon by some distributors and businesses.
- Survey coverage. Given the large number of businesses selected for the survey (178), the percentage contacted was high (69.66 per cent), as was the percentage of surveys completed (82 per cent). This shows the considerable hortatory powers of the OTU (46.07 per cent of the selected firms, 66.14 per cent of the contacted firms).
- Coverage of installed capacity. Although the number of businesses contacted was small compared with the national total, the amount of halon reported was high, approximately 40 per cent of the total installed in the country. This was due principally to the type of businesses that answered the survey and the sectors in which they operate.

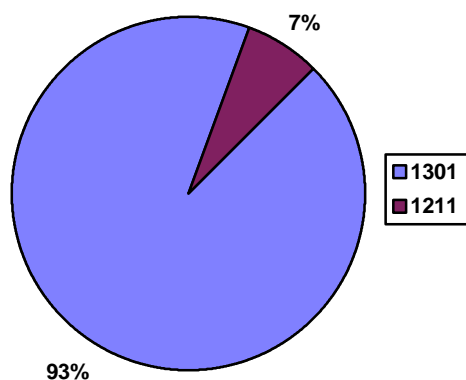
Some distributors consulted on this point indicated that, as mentioned above, the sectors with the greatest halon consumption were petroleum, telecommunications, banks and electrical energy, and that these sectors accounted for nearly 70 per cent of total installed capacity.

- Installed capacity. The data obtained may be divided in two categories: (a) that based solely on information provided by each business, and (b) the data in (a) plus that provided by distributors.

(a) Based solely on information provided by each business

The quantity of installed halon is 173.97 tonnes ODP of 1301 and 13.10 tonnes ODP of 1211. The distribution of halon 1211 and 1301 is shown in the following chart.

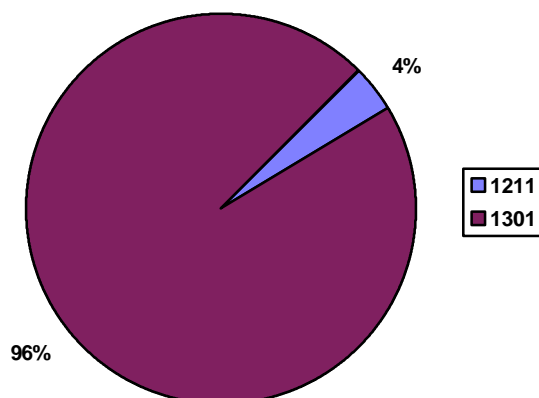
Distribution of halons (without distributor information)



(b) Taking into account information provided by suppliers

This information relates primarily to fixed systems, which increases the share of 1301 in installed capacity. The quantity of installed halon is 295.95 tonnes ODP of 1301 and 13.10 tonnes ODP of 1211. The distribution of halon 1211 and 1301 is shown in the following chart.

Distribution of halons (with distributor information)



With distributor information	
Halon type	Tonnes ODP
1211	13.1
1301	295.95

Without distributor information	
Halon Type	Tonnes ODP
1211	13.10
1301	173.97

From the information provided by the distributors and the completed surveys, in addition to the ozone-depleting potential of these substances (for 1301, 10.0, and for 1211, 3.0), there is an installed capacity of 309.05 tonnes ODP, or approximately 40 per cent of the total installed in the country.

- Halon substitutes. The principal halon substitute used by a majority of businesses is HCFC-123 (commercial name: Solkaflán 123), both for 1211 and 1301.
- Halon bank. For distributors and businesses alike, the idea of a halon bank is confusing, and many believe they must donate their existing halon stocks to for the establishment of the bank.

The establishment of the halon bank is compromised by the low volume of halon under management in the country, together with the influence of the various distributors over businesses with respect to changing to alternative substances that do not damage the ozone layer. Many businesses change to alternative substances once their halon systems are exhausted, without demonstrating any interest in recharging their systems with these same substances.

An information campaign on the subject for both distributors and businesses and a wider study encompassing other businesses is necessary to the establishment of a halon bank.

Regional participation in a halon management plan (HMP)

On the initiative of the OTU and with the collaboration of the CSC, a national survey was prepared last year on the existing reserves of halon in the country. The purpose of the survey was to receive funding for the preparation and execution of an HMP.

Thanks to information provided to UNEP, Colombia will participate in a regional halon management project. It expects to receive, through this project, financial and technical assistance - approved in November 1999 by the Executive Committee of the Montreal Protocol in Beijing - to improve present perceptions with respect to halons and to prevent depletion of the ozone layer through integrated halon management.

The HMP should contemplate not only activities to reduce total consumption as has already been the case, but also the management of current reserves of halons in the country and the prevention of the uncontrolled release of these substances into the atmosphere. Activities that could be included in the project to carry out the HMP include:

- Execution of a halon management plan, enlarging on the survey carried out by OTU.
- Dissemination of information, directed to consumers and distributors and fire protection agencies and associations, on the appropriate use of existing halon stocks. A campaign aimed at preventing the premature change from the use of halon reserves, directed to consumers, distributors, and fire protection agencies and associations.
- Operation of a regional halon bank including Bolivia, Chile, Ecuador, Paraguay, Perú, Uruguay and Venezuela.

For more information: <http://www.minambiente.gov.co/ozono>.

ANNEX I

PRESENT CONSUMPTION AND INSTALLED QUANTITIES OF HALON

Below you will find a series of questions that we ask you to answer according to your experience as a consumer.

COMPANY: _____ ADDRESS: _____
 CONTACT: _____ TELEPHONE: _____
 TITLE _____ FAX: _____
 E-MAIL: _____

NOTE: If you think you need more space to properly respond to this questionnaire, you may use attachments.

1. List your providers of Halon 1211 (extinguishers) and Halon 1311 (automatic systems).

2. Indicate the number of manual and automatic fire prevention systems you have containing Halon or a substitute agent.

System type	Capacity	Quantity	Date installed	Useful life	Type of agent

3. What type of Halon-based fire prevention equipment have you used, and how many times?

Type of equipment	Capacity	# of times charged	Dates charged

4. Identify the firm that maintains and recharges your Halon-based equipment.

Name of firm	Address and telephone

5. Have you considered using or are you using a Halon substitute? When did you first consider using or start using such a substitute?

Substitute agent	Date

PLEASE RETURN TO THE OZONE TECHNICAL UNIT. FAX: 3406215

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