



ZonAction



A newsletter dedicated to the protection of the ozone layer and implementation of the Montreal Protocol

UNEP IE quarterly publication

OzonAction Programme under the Multilateral Fund

Editorial

The Fund needs more resources

It gives me great pleasure to say how delighted I am with the remarkable achievements of the Executive Committee (ExCom) of the Multilateral Fund since its creation and the spirit of collaboration that has always been a hallmark of its work.

As Vice-Chairman of the ExCom, I am also pleased to be able to record that the Montreal Protocol is one of the few international agreements on the environment to have been widely implemented. The Parties to the Protocol should congratulate themselves and take pride in their achievements. Most of the donor countries have fulfilled their financial obligations; the recipient countries have demonstrated a remarkable determination to eliminate ozone-depleting substances (ODS); and the implementing agencies have proved their ability to manage and successfully complete the projects entrusted to them.

I must, however, mention my anxiety that our progress is now being seriously affected by the Fund's recent financial difficulties. If these problems persist, they may compromise the objectives of the Montreal Protocol, particularly the timetable set up for the elimination of ODS.

It appears contradictory to me that the Parties are committed to end the use of ODS with the minimum delay, whilst resources presently available to fulfil such commitments are lacking. The developing countries which are trying to eliminate ODS may find that their financial needs are not adequately met.

This situation has led the ExCom to establish restricting criteria regarding access to funds. Such constraints may affect the speed with which projects to protect the ozone layer will be implemented.

Such a situation is creating concerns among Article 5 countries which might not feel as obliged to respect their commitments.

At their next meeting, therefore, the Parties to the Protocol should devote more time to studying ways and means of increasing the Fund's resources.



*Mohamed El Hadi Benmadji,
Vice-Chairman,
Executive
Committee of the
Multilateral Fund*

150 days to go for CFC phase-out in developed countries

11th Meeting of the OEWG considers further Protocol amendments

The 11th meeting of the Open-ended Working Group (OEWG) was held in Nairobi, Kenya, from 8 to 12 May 1995. The third reports of the assessment panels, and several other reports, were presented to the Group. Highlights from the assessment reports included:

- growth of stratospheric ODS concentrations has slowed down;
- chlorine concentrations will peak in the year 2000 and then recover in more than 50 years if further

- additional measures are taken now; developed countries could take further steps to lower stratospheric bromine concentrations by tightening controls on methyl bromide;
- the ozone layer will never recover if developing countries do not adopt control measures for HCFCs and methyl bromide, and if they increase consumption of these substances significantly.

The Group then considered the report

on the Financial Mechanism. It found that UNEP's clearinghouse activities were effective, that the UNDP and UNIDO investment project mechanisms were fast, and that the major delays in World Bank implementation were due to the Bank's policy of 'national execution'.

The Group made significant progress in drafting possible adjustments and amendments to the Montreal Protocol and

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News from international agencies



Fund Secretariat

Following the 16th ExCom Meeting, the Secretariat met with the implementing agencies to decide on follow-up

actions and produced a guide for the preparation of the policy papers requested by the ExCom. The Secretariat distributed the report of the meeting to all Parties and reviewed for ExCom approval a group of small-scale foam projects for India worth US\$3.3 million. It also prepared reports on the needs of Article 5 countries for controlled substances during the grace and phase-out periods, and on the financial status of the Fund, for the 11th OEWG Meeting. It reviewed a number of project proposals and country programmes, and made preparations for the 17th ExCom meeting (25–28 July). It also prepared a synopsis of each of China's draft sector strategies for phasing out ODS, a paper on innovative approaches for ODS phase out in China and liaised with the Government of China in organizing an inter-agency meeting in China to consider these strategies.

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Tel: (1) 514 282 1122 Fax: (1) 514 282 0068



UNEP Ozone Secretariat

The Secretariat organized the 11th OEWG meeting in Nairobi, Kenya, during 8–12 May, which was attended by nearly 200 participants from 73 Parties and 3 non-Parties. The Fund Secretariat, the implementing agencies, the GEF Secretariat and more than 40 representatives from industry and NGOs also attended. The meeting considered many issues, including proposals for adjustments and amendments to the Protocol, which were consolidated into a single document and distributed to governments.

The Secretariat serviced a seminar of the Technology and Economic Assessment Panel in which more than 80 participants discussed many issues including the status and importance of HCFCs to CFC phase out, the technical feasibility of methyl bromide reductions and essential use

nominations. The Secretariat conducted the meeting of the task force for the celebrations of the 10th anniversary of the Vienna Convention and the International Day for the Preservation of the Ozone Layer (16 September).

The Secretariat also participated in the Second Meeting of the Secretariat of Environmental Conventions and contributed to the preparation of the GEF Operational Strategy for dealing with ozone depletion.

Contact: Mr K. M. Sarma, UNEP Ozone Secretariat, PO Box 30552, Nairobi, Kenya
Tel: (254) 2 623 885 Fax: (254) 2 521 930



UNEP IE

The First Meeting of the English-speaking African Network of ODS Officers (ODSONET

AF/E) was organized in Nairobi, Kenya, during 15–18 May (see page 7).

A regional technology transfer workshop on Non-CFC Technologies for Domestic Refrigeration Manufacturing Industries in Latin America South was organized in São Paulo, Brazil, during 18–19 May. It brought manufacturers from developed and developing countries together to exchange experiences. A regional meeting on Aerosol Conversion for the South-east Asia and Pacific Region was held in Jakarta, Indonesia, during 29 May–1 June to consider the findings of Global Aerosol Projects and initiate national strategies.

UNEP has completed eight more country programmes and their respective institutional strengthening projects, i.e. Congo, Dominican Republic, Lebanon, Malta, Peru, St Lucia, Togo and Vietnam. These will be submitted to the 17th ExCom meeting for approval.

Contact: Mrs Jacqueline Aloisi de Larderel, UNEP IE, 39–43 quai A. Citroën, 75739 Paris Cedex 15, France
Tel: (33) 1 44 37 14 50 Fax: (33) 1 44 37 14 74



UNDP

During April 1995, UNDP completed ODS phase-out activities in two investment projects on solvents in Malaysia (eliminating 33 tonnes of ODS) and two in China. One of the latter was the first completed investment project in China and

involved phasing out 180 tonnes of CFC-11 in flexible foam manufacturing at the Tianjin Polyurethane Plastics Factory. The other eliminated 160 tonnes of CFC-12 in the manufacture of extruded polyethylene foam sheet at the Danshui Euaya Plastics Factory. By the end of April, UNDP had completed 19 investment projects in China (2), Egypt (5), Malaysia (11) and Thailand (1) that have eliminated a total of 1405 tonnes of ODS.

Contact: Mr Frank Pinto, UNDP, 1 United Nations Plaza, New York, NY 10017, United States
Tel: (1) 212 906 5042 Fax: (1) 212 906 6947



UNIDO

The 16th ExCom meeting took note of the UNIDO work programme for 1995, with a project budget for US\$71 million. The ExCom also approved the funds for project formulation in Côte d'Ivoire, Lebanon and Romania for a total of US\$80 000.

At its 15th session, the ExCom had decided that the second phase of a domestic refrigeration project in Iran should go through the intersessional approval process. The Fund Secretariat has reported that the project is now approved and that the release of US\$6 416 134 has been requested.

Contact: Mrs A. Tcheknavorian, UNIDO, PO Box 300, A-1400 Vienna, Austria
Tel: (43) 1 21131 3782 Fax: (43) 1 230 7449



World Bank

The programme presented to the 16th ExCom meeting outlined new investments for 1995 in the range US\$95–110 million. The Bank also outlined its plans to continue its focus on supervision of project implementation and to prepare guidelines on the monitoring and evaluation of projects. In 1995, the Bank will continue to concentrate its efforts on larger developing countries to which the Bank's local implementation approach is best suited. Continuing emphasis will be placed on fostering the necessary local capacity and policies for sustained ODS phase out.

Contact: Mr Ken Newcombe, World Bank, 1818 H. Street, N.W. Washington D.C. 20433, United States
Tel: (1) 202 477 1234 Fax: (1) 202 522 3256

Industry and technology updates

AEROSOLS

DME plant set up in Czech Republic

The Czech company Lybar is producing aerosols using dimethyl ether (DME) as the propellant. Two new hair sprays are already on the market and filling began at Lybar's new plant in November 1994, according to a report in *Aerosol and Spray Report* (March 1995). The company has also expanded its propellant range to include propane/butane mixtures.

The new underground installation includes two 100 m³ storage tanks and a 16 m³ mixing tank. Security systems sound an alarm when concentration reaches 20 per cent of the lower combustion limit; at 40 per cent, the installation closes down.

The first delivery of DME was made by Akzo. Lybar is believed to be only the second company in East Europe to use DME as a propellant. The other is Oli Cosmetics of Oberlichtenau, formerly in the Democratic Republic of Germany.

Contact: Lybar, fax: (42) 417 265 67

Interest mounts in Novospray actuator

Technical developments are continuing to focus attention on non-hydrocarbon alternatives, such as CO₂, compressed air and liquefied inert gases. The Novospray actuator, which was developed in Switzerland and which was presented at the 7th meeting of the World Bank's Ozone Operations Resources Group (see

page 8), is a spring-operated actuator which is capable of compensating for the pressure loss that normally occurs with compressed gases so that spray characteristics are unaltered throughout the life of the product.

Contact: Novospray, fax (41) 66 56 84 21

FIRE FIGHTING

Halotron I approved for airport firefighting

American Pacific Corporation in the United States has announced that its fire suppression system Halotron I, based on HCFC-123, has received approval from the US Federal Aviation Administration for use in airport firefighting as a substitute for halon-1211.

Halotron I has already been approved for use by the US Environmental Protection Agency (EPA), and is a candidate for replacing halon-1211. It is reported to be relatively easy to modify existing equipment to use Halotron I: the stem seal, gasket and nozzle tip of the cylinder need to be changed, and a larger flow regulator may need to be installed. Halotron I also requires the use of an expander gas for expelling the agent, instead of the nitrogen cylinder traditionally used to expel halon-1211.

Contact: American Pacific Corporation, fax: (1) 702 735 4876

UNEP IE welcomes information from industry and will mention as many new technologies and products as possible in this newsletter

FOAMS

Liquid CO₂ in flexible foams

Cannon (Germany) has extended the use of liquid CO₂ as a CFC replacement to the fields of flexible polyurethane (PUR) moulded foam under the name Cannoxide. This follows the introduction of Cannon's Cardio technology more than a year ago for replacing CFCs with liquid CO₂ for flexible slabstock PUR foams: two commercial production units are already using this process, and several more are expected this year.

Other manufacturers are developing their own versions of this technology, including Beamech in the United Kingdom and Laader Berg in Norway. Interest in the technology is growing since it neither depletes ozone nor contributes to global warming.

**Contacts: Cannon, fax: (49) 6131 883547
Beamech, fax: (44) 161 873 7718
Laader Berg, fax: (47) 70 15 0341**

Slow progress with integral skin foams

Progress in phasing out the use of ODS in the production of integral skin foams (ISF) is reported to be slow, partly because production volumes are small and partly

Phase-out success: Venezuelan firm eliminates CFC-12 from foam production

Venezuela has successfully completed an investment project funded by the Multilateral Fund through the World Bank for the substitution of CFC-12 by hydrocarbons (butane and isobutane) in the manufacture of expanded polystyrene sheet (EPS) at Plásticos Molanca C.A. (PMCA) in Caracas. PMCA used to consume 259 tonnes a year of CFC-12 in its annual production of nearly 2600 tonnes a year of EPS. PMCA has thus become the pioneer firm in the sector for the Latin American region.

PMCA produces a series of EPS articles for the fast food business which are used to pack meat, fruit, bread and eggs. Introducing the hydrocarbons made major changes to production procedures since the explosive

Project cost summary

component	US\$1000
process equipment	448
safety systems	235
civil, electrical and mechanical work	458
technology transfer, engineering, construction management	246
contingency	213
Total	1600

properties of hydrocarbons require strict safety rules. Electrical installations such as lighting and motors had to be made explosion-proof, and all equipment had to be earthed. Reliable means of eliminating static

electricity had to be introduced and new alarm systems had to be installed. All the main production areas had to be carefully ventilated, and a handling and storage system had to be designed for waste EPS. Plant operators had to be trained in handling procedures for liquefied petroleum gases. In this the company was given assistance from Sekisui Plastics Ltd in Japan, which has 50 years experience of the use of hydrocarbons in foam blowing and with whom PMCA has a licence agreement.

The project was prepared by PMCA under the supervision of Sekisui Plastics and Keyes Fibre Co. in the United States, with the help of the Venezuelan Ministry for the Environment and Natural Resources.

Contact: FONDOIN, fax: (58) 2 519 684

because of the uses to which ISF are put. The emerging non-ODS technology is water-based systems, with HCFC-22 being used as an interim technology. However, HCFC-22 often causes frothing in tropical countries and in Japan the use of water-based technologies in the production of steering wheels has not produced products with the required density and hardness. As a result, HCFC-22 is still being used.

Contact: Bert Veenendaal, fax (1) 219 326 6047

UNEP IE's OzonAction Programme, in cooperation with the Stockholm Environment Institute, is collecting information on ODS legislation and regulations. The results will be published and distributed to all National Ozone Units and to anyone providing the requested information. Questionnaires are available from the OzonAction Programme, fax: (33) 1 44 37 14 74

REFRIGERANTS

Detecting refrigerant leaks

A range of commercial devices, called the FRED™ (For Refrigerant Emission Detection) system, is available for detecting refrigerant leaks in centrifugal chillers. Three models are available, called Ms FRED, Air FRED and Mac FRED, from Synertec Systems, Inc. in Boulder, Colorado, United States.

Contact: Synertec Systems, fax: (1) 303 444 6908

R-407 effective substitute for HCFC-22

A study conducted by ICI Klea, Aspen Systems and Hannaford Brothers in New York suggests that KLEA™ 407C is an effective alternative to HCFC-22 in air conditioning systems. The study confirms other reports that R-407 refrigerants in general—which are based on a mixture of HFC-32, HFC-125 and HFC-134a—can profitably be used to replace HCFC-22 in domestic and commercial air conditioning and refrigeration systems.

The new study evaluated performance in an air conditioning system in a supermarket with nearly 6000 m² of floor area. The conversion took less than a full day and the study shows that the energy efficiency of the new system improved at

temperatures of less than 33 °C. At higher temperatures energy efficiency fell by some 3 per cent.

Contact: ICI Klea, fax: (1) 302 887 7706

Natural gas now feasible for cooling and heating

According to the American Gas Association, the use of natural gas to cool, heat and dehumidify homes and small businesses is becoming economically more feasible. The US company Triathlon, for example, produces one such system and natural gas cooling has been installed at the National Audubon Society in New York and at the new Denver International Airport.

Contact: American Gas Association, fax: (1) 703 841 8687

Mixed refrigerant vapour compression shows power savings

A vapour compression system using a mixture of refrigerants developed by a group at Leeds University in the United Kingdom may provide substantial energy savings, according to a report by the British Technology Group in the United States. The new technology is suitable for small to medium-scale air conditioning system and first tests have shown energy savings of up to 30 per cent. The Leeds

University group is continuing to research the technology for applications in vehicle and window air conditioning units.

Contact: British Technology Group, fax: (1) 610 278 1605

US firms join up to reach European market

Three US firms—Owens Corning Fiberglass Corporation, Marlow Industries Inc. and Oceaneering International Inc.—are together trying to offer European refrigerator manufacturers a new technology: the Advanced Thermoelectric Refrigerator, which uses an assembly of solid-state devices on top of domestic refrigerators to collect and transfer heat to a salt mixture which circulates through the refrigerator cabinet; the mixture melts when it absorbs heat and regenerates when it is cold, thus providing uniform temperatures. According to *ENDS Report* (24 March 1995), the new refrigerator design has also eliminated plastic foams blown with CFCs—using instead vacuum panels made of glass fibres covered by stainless steel foil, which are said to be more energy efficient.

Contacts: Owens-Corning, fax: (1) 419 248 5337
Marlow, fax: (1) 214 341 5212
Oceaneering, fax: (1) 713 578 5243

Refrigeration management system to be marketed by Sonic

The patents and technology of the RMT™ refrigerant management system developed by Southeastern Refrigerant Management Systems Inc. in the United States has been acquired by Sonic Environmental Systems Inc. The system, which is designed to provide high efficiency purging and refrigerant recovery, consists of a storage tank with a condensing coil, filter driers and vacuum pump, and is equipped with Sonic's Enviro-Purge™ system. The system can be connected to up to eight chillers at a time and it is claimed that in more than 30 installations in the Florida area there has been virtually no refrigerant loss over a period of five years. Sonic claims that the system can save the owners of large cooling systems considerable CFC costs.

Contact: Sonic, fax: (1) 201 882 1486

New ammonia-based chiller

York International Corporation (United States) has introduced a new air-cooled screw chiller which uses ammonia as a refrigerant. The company chose ammonia because of its high efficiency and low cost; it claims that the new chiller will be competitive with



A'GRAMKOW mobile equipment being used to service an air conditioner in a car without release of refrigerant. The Danish company offers a range of products for handling refrigerants.

Contact: A'GRAMKOW, fax: (45) 74 43 36 30

UNEP IE is preparing a compendium of technical case studies on how to eliminate the use of ozone-depleting substances. Governments and industries which have case studies to contribute are asked to contact UNEP IE.

conventional chillers in energy efficiency. The first phase of the product line will cater for capacities up to 120 tonnes.

Contact: York International, fax: (1) 708 541 9615

METHYL BROMIDE

Safe methyl bromide alternative for shipping produce

The US Defense Logistics Agency announced it has developed a safe, non-toxic alternative to methyl bromide: controlled atmospheres, a technique that controls temperature and atmosphere composition inside sealed shipping containers and structures. According to DLA, controlled atmospheres is comparatively inexpensive, highly effective and improves the quality of the shipped produce.

Contact: Defense Logistics Agency, fax: (1) 804 279 4970

SOLVENTS

Dow Europe begins trichloroethylene production

Dow Europe has started production of trichloroethylene at its converted 1,1,1-

trichloroethane plant in Stade, Germany. Trichloroethylene will be available in a number of grades, covering a wide range of metal-cleaning applications. Under the Montreal Protocol, 1,1,1-trichloroethane is being phased out in developed countries.

Contact: Dow Information Centre, fax: (31) 20 69 16 412

New hydrocarbon/terpene blend

In the United States, Ecolink Inc. has announced the introduction of a new hydrocarbon/terpene blend solvent called Positron. The product is said to have less odour and enhanced solvency; drying times are claimed to be three times as fast as previous products and non-volatile residues are less than 10 parts per million.

Contact: Ecolink, fax: (1) 404 621 8245

Selective cleaner for resins

Arakawa Chemical Industries of Japan has developed a semi-aqueous cleaning agent which the company claims can selectively clean resin-based flux and act as a substitute for CFC-113 in the production of printed circuit boards. The product, called Pine Alpha ST-100S, is said to be non-flammable. A complete cleaning system, consisting of a cleaning machine, monitoring equipment and a water regeneration unit, is also available. The Pine Alpha Series also includes alternatives for 1,1,1-trichloroethane used in metal and precision parts cleaning.

Contact: Arakawa, fax: (06) 209 8542

Ozone science news

Oceans may be sink for methyl bromide

The oceans may be a sink rather than a source for methyl bromide, according to a recent report in *Science* (17 February 1995, vol. 267, pp. 1002–05). For the study, Jürgen Lobert and colleagues from the National Oceanic and Atmospheric Administration (NOAA) in Boulder, Colorado, United States, measured the partial pressure of methyl bromide in the east Pacific Ocean and the atmosphere. The researchers found that areas of open ocean in both hemispheres had a lower partial pressure of methyl bromide than the air did, indicating that the ocean was absorbing methyl bromide from the atmosphere. If similar conditions are true

for the other oceans, the oceans may be a net sink for 6300–18 900 tonnes of methyl bromide a year.

Contact: NOAA, fax: (1) 303 497 6290

Canadian officials fear UV rises

Canadian scientists from the Atmospheric Environment Service of Environment Canada fear that ozone levels will be 5–9 per cent lower during the period May–August 1995 than normal. If so, levels of ultraviolet radiation are expected to increase by 6–10 per cent, raising the risk of skin cancers, eye damage and other health problems.

Contact: Atmospheric Environment Service, fax: (1) 819 994 0549

In brief...

○ The Australian Government hosted an informal consultation on the Montreal Protocol in Cairns, Australia, during 30 March–5 April 1995. Experts from about 20 countries debated the financial mechanism of the Protocol, the problems of developing country Parties that consume small ODS volumes, further control measures on HCFCs and methyl bromide, and particular issues of relevance to economies in transition.

Contact: UNEP IE OzonAction Programme, fax: (33) 1 44 37 14 74

○ The Malawi National Workshop was held on 24 March 1994 in Blantyre, Malawi, and was opened by the Minister of Research and Environmental Affairs, Hon Dr M. Nzunda, who invited participants to explore options for replacing methyl bromide, which is widely used by the tobacco industry in Malawi. The meeting also considered how to reduce and eventually phase out ODS use in the refrigeration and halon sectors, and asked for UNEP's help in mounting a public awareness campaign.

Contact: Ministry of Research and Environmental Affairs, fax: (265) 781 487

○ A workshop on ODS disposal technologies was organized by Environment Canada for the UNEP Ad Hoc Committee on ODS Destruction Technologies during 1–5 May 1995 in Montreal. The workshop concluded that existing destruction facilities in developed countries were adequate to dispose of ODS wastes until the year 2000.

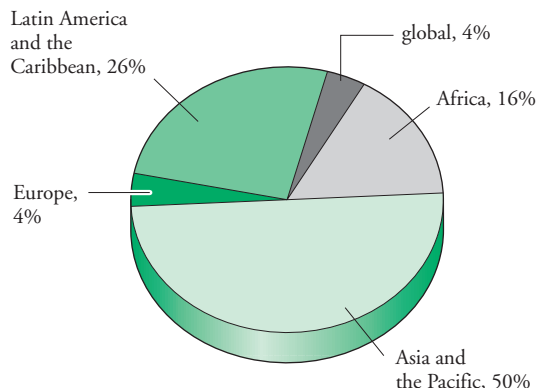
Contact: Environment Canada, fax: (1) 819 953 4705

○ Crain Communications will issue its 1996 edition of the *Global Polyurethane Industry Directory* on 14 July 1995. This directory is a useful complement to UNEP's source book for CFC-free technologies in the foam sector.

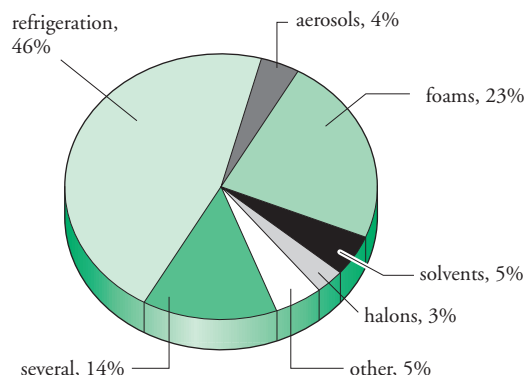
Contact: Crain, fax: (44) 171 608 1173

How the funds are allocated

a) by region



b) by sector



Figures include both the Multilateral Fund and bilateral contributions—source: COWI Review of the Financial Mechanism, December 1994

'Speed things up' say reviewers of Financial Mechanism

In its review of the Montreal Protocol's Financial Mechanism, the consultant firm COWIconsult of Denmark, which was guided by a Steering Committee chaired by Ambassador Mr Juan Mateos of Mexico, concludes that 'the essential issue facing the Financial Mechanism as an institutional system is less its capacity to develop, review and approve projects than its ability to implement approved projects in a timely manner'.

The consultants note that after four years of operation, only 10 investment projects have been completed, eliminating 3000 tonnes a year of ODS. If there had been no delays, this figure would have been 20 500 tonnes a year (when all approved projects in Article 5 countries are completed, some 51 000 tonnes of ODS emissions a year

will have been eliminated). The consultants conclude that this slow rate of progress is mainly the result of long delays between project approval and implementation.

The consultants note that World Bank projects are slowed down by the Bank's policy of 'national execution'. UNEP is recognized for the role it has played in creating the regional information networks, and the *OzonAction Newsletter* and the Technical Brochures are singled out as success stories.

Major recommendations include:

- UNDP and UNIDO should continue to do centralized project implementation which has proven faster than the World Bank's policy of national execution;

- the World Bank should concentrate its efforts on countries with large ODS production so that the large investments involved in institutional strengthening for national execution can be justified;
- smaller and medium-sized ODS consuming and producing countries should avoid national project execution, which is inevitably slow;
- the World Bank should help UNEP in collecting financial arrears; and
- information networks in Africa and Latin America should receive more support.

The report concludes that the best way to accelerate ODS phase out is to concentrate on those projects that are highly cost effective.

16th Excom meeting conclusions on CH₂Cl₂, halons and policy communications

As reported in *OzonAction News 14*, the 16th ExCom meeting broke important new ground in several areas. This article deals with three topics not covered in the previous issue—specific ways of calculating the incremental operating costs in methylene chloride (CH₂Cl₂) projects, project requirements for phasing out halons in fire extinguishers and methods of disseminating policy issues more widely.

Methylene chloride

Annex IV summarizes the methodology to be used in calculating the incremental operating costs in CH₂Cl₂ projects. The calculations can include the relative prices of CH₂Cl₂ and CFC-11, the need for different catalysts and polyols, the increased use of toluene di-isocyanate, the

cost of softener, yield loss, and increased energy and maintenance costs.

Halon fire extinguishers

The meeting agreed to give priority to fire extinguisher projects over the next few years. Projects should aim to phase out a country's complete use of halons through import bans or reduced production, or both; agreements should be reached on the price of substitutes with their producers; projects should present baseline and capital and operating costs; and the World Bank will be asked to prepare a study on how to set up a concessional loans mechanism, specifying what options are available, what steps would be needed to put such a mechanism into place and to what extent the Bank could use its resources or

resources from other sources for halon phase out in Article 5 countries.

Policy communications

Annex III details a procedural modification which is intended to ensure that policy communications are disseminated in the future in user-friendly language. Sub-committees are asked to identify policy issues that have surfaced, and to spell out their operational implications. Such issues can then be addressed and approved by ExCom meetings, and disseminated through the implementing agencies' field officers, the Regional Networks and the OzonAction Information Clearinghouse. The idea is to develop a process that allows the key agreements reached verbally to be documented and more widely shared.

Questions and answers

Question: *Our airline would like to have recycled halon for on-board use until a suitable replacement is found. How can we ensure that the recycled halon is of good quality?*

Answer: The best way to ensure quality is to ask for certification of the material according to an appropriate technical standard such as ISO 7201 or ASTM ES24-93 (originally intended for newly produced halons). Efforts are under way to develop other suitable standards for recycled halons.

For additional information contact UNEP IE's OzonAction Programme.

Question: *My company is seeking alternatives for CFC-12 as a refrigerant and is interested in blends. There is a product called R-401B described as a substitute for CFC-12. How can I obtain detailed technical information on this product and a list of all the manufacturers which market ternary blend refrigerants?*

Answer: The UNEP Refrigeration Technical Options Committee has provided technical information on R-401B. The product is a drop-in substitute for CFC-12 applications at low temperatures. It is a ternary blend with the composition of HCFC-22 (61%)/HCFC-124 (28%)/HFC-152a (11%). It has been approved by ASHRAE and given an ASHRAE number and safety classification. The recommended lubricant for R-401B is alkyl benzene. The blend is manufactured by DuPont under the trade name SUVA® MP66. An information paper on *Blends as Refrigerants for Vapour Compression Refrigeration* and a contact list for manufacturers of refrigerants are available from the UNEP IE OzonAction Programme. Note that HCFCs are also controlled substances and will be phased out under the Montreal Protocol in developed countries.

UNEP IE's OzonAction Programme acts as a Clearinghouse for information on ODS, and is available to answer queries of this kind.

... continued from page 1

in resolving other major issues.

The discussion on adjustments and amendments included the phase-out schedule for methyl bromide; the revised phase-out schedule on HCFCs for developed countries; the phase-out schedule for all controlled ODS for developing countries; the definition of 'feedstock' and 'basic domestic needs' in the context of the Montreal Protocol; the definition of 'quarantine' and 'pre-shipment' in relation to methyl bromide; and the limitation of uses of CFCs as chemical process agents.

These and other proposals were discussed by a Legal Drafting Committee and consolidated into one document which will be the subject of formal negotiations at the next meeting of the OEWG, to be held during 28 August to 1 September 1995 in Geneva, Switzerland.

Avoid the black market

Black market CFCs and other ozone-depleting substances have made an unwelcome appearance in many countries. In the United States, a government-led task force, consisting of the Internal Revenue Service, the USEPA, the US Customs Service and the Alliance for Responsible Atmospheric Policy, has been investigating illegal imports and unpaid taxes on CFCs. Three cases of CFC smuggling have already been brought to court this year, the last involving the smuggling of no less than 880 tonnes of CFC-12. The tax due on such a consignment would have been more than US\$10 million.

The Internal Revenue raises a substantial tax on CFC imports (worth some US\$1000 million in 1994). This tax has accelerated the search for alternatives but, according to an article in *Circuits Assembly* (April 1995), it has also been partly responsible for creating the US black market, since it effectively quadruples the price of CFCs; avoiding this tax can provide big profits for smugglers. Most other countries, including those in the European Union and Canada, do not raise a CFC tax. In the United States, the penalty for violating EPA regulations can amount to US\$25 000 per violation.

Contact: USEPA, fax: (1) 202 233 9665;

ARAP, fax: (1) 703 243 2874



A special issue of the German Development Agency GTZ's magazine Akzente (December 1994) describes in detail GTZ's cooperation with one of China's largest refrigerator manufacturers, Haier, which plans to convert its 600 000 units a year production to hydrocarbons. It also reports on the Greenpeace initiative that helped produce the Foron refrigerator and on a pilot project in India on hydrocarbon refrigeration.

Contact: Akzente, fax: (49) 61 96 796169

Network news

Latin America

More than 110 participants from ten countries attended the Regional Workshop on Non-CFC Technologies for Domestic Refrigerator Manufacturing Industries in the Latin American Region, held in São Paulo, Brazil, during 18–19 May. The workshop was organized by the government of Brazil in cooperation with UNEP IE's OzonAction Programme and UNDP. Manufacturers in Latin America were able to benefit from the experience of manufacturers in developed countries and experts of the implementing agencies.

Africa

The first meeting of the ODS Officers Network for Africa was held in Nairobi

during 15–18 May. Attended by 19 countries from English-speaking Africa, it served as the organizational meeting for the African network of ODS officers. The workshop examined problem areas such as ODS monitoring and methyl bromide use in Africa, and made definite recommendations to address these issues.

Asia and the Pacific

The UNEP Regional Workshop on aerosol conversion, held at Puncak Pass, Indonesia, during 29 May–1 June, was attended by 75 representatives from nine countries. The workshop considered issues related to the aerosol filling companies in urban areas that need to be relocated and the need for adequate supplies of hydrocarbon propellants. Work also begun on the preparation of national strategies for the sector.

Status of Ratification

(as at 31 April 1995)

The Vienna Convention

151 Parties, new Parties: Latvia, Zaire

The Montreal Protocol

149 Parties, new Parties: Latvia, Zaire

The London Amendment

102 Parties, no new Parties

The Copenhagen Amendment

41 Parties; new Parties: Argentina, Israel

Recent publications

Alternatives to Methyl Bromide: excerpts from the UN Methyl Bromide Technical Options Committee 1995 Assessment, Pesticide Action Network North America, San Francisco, United States, 1995

UV Radiation from Sunlight, Health Council of the Netherlands, The Hague, 1994

Handling and Reuse of Refrigerants in the United States, Air Conditioning and Refrigeration Institute, Arlington, Virginia, United States, December 1994

Technical Supplement to the Environmental Indicators on Stratospheric Ozone Depletion: fall 94 update, Environment Canada, Ottawa, December 1994

Forthcoming meetings

National Training Course on Chillers and Refrigerant Management, Bangkok, Thailand, 18–19 July 1995

17th Executive Committee Meeting, Montreal, Canada, 26–28 July 1995

Meeting of the Bureau of the Parties, Geneva, Switzerland, 25 August 1995

1995 ODSNET/SEAP Meeting, Manila, Philippines, August 1995

12th Meeting of the Open-ended Working Group, Geneva, Switzerland, 28 August–1 September 1995

7th OORG meeting

The 7th Meeting of the World Bank's Ozone Operations Resources Group (OORG) was held in Washington DC, United States, on 11 April 1995. Participants discussed project proposals and new developments in aerosols, foams, refrigeration, mobile air conditioning, solvents and halons. The meeting also considered a report on the availability, costs and prices of hydrocarbons in developing countries, the results of a study

carried out to assess the cost of converting chillers in Article 5 countries, prototype project specification and design templates, and progress on monitoring and evaluation guidelines. The chiller study estimated that there were about 10 000 chillers in operation in relevant Article 5 countries, and that conversion costs of chillers more than 25 years old were roughly equal to the annual savings that would result from reduced energy consumption by the converted chillers.

Contact: World Bank, fax: (1) 202 522 3256

World news

Austria and Sweden push for earlier HCFC phase out

Austria and Sweden, new members of the European Union since 1 January 1995, have joined Denmark in an effort to bring forward the phase-out date for HCFCs to as early as 1998, even though the European Union's scheduled deadline for HCFCs is 2015—15 years ahead of the amended Montreal Protocol deadline.

Last year, Denmark passed a law to start a rapid phase out of HCFCs in 1996, with a complete phase out by 1998.

Contact: EC DGXI, fax (32) 2 29 69 559

Singapore bans CFCs in new vehicle air conditioners

Singapore's Ministry of the Environment has informed the General Agreement on Tariffs and Trade (GATT) that it has controlled the use of CFC-11, CFC-12, CFC-113, CFC-114 and CFC-115 in new vehicle air conditioners with effect from 1 January 1995. The control is issued under Singapore's Poisons Act.

Contact: Ministry of Environment, fax (65) 731956

Japan and United States to increase technological cooperation with Asia

One result of the US-Japan Environmental Executive Leadership conference, held in Nara, Japan, 25–27 April 1995, was an agreement between the two countries to increase technology cooperation on ODS phase out with Asia, starting with seminars in Thailand and Viet Nam in September this year.

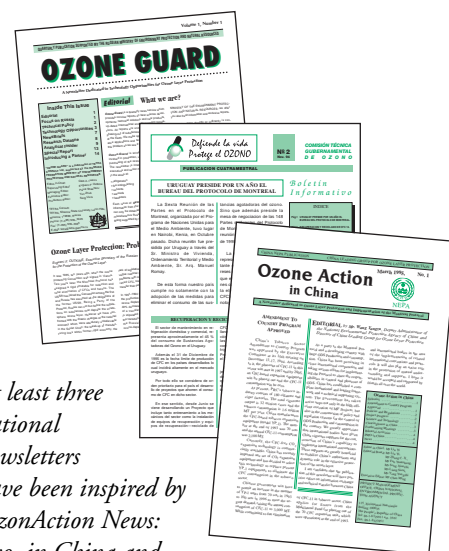
Contact: USEPA, fax: (1) 202 233 9665

Australia announces controls for HCFCs

Australia has decided to amend its three Ozone Protection Acts to include controls on HCFCs. HCFCs will be phased out through an innovative scheme that allows industry to self-regulate, under a steadily reducing limit set by the Minister. As

agreed with industry, the limit for HCFCs in 1996 is set at only half the amount allowed by the Montreal Protocol. Nevertheless, this is calculated to be more than that needed for the new equipment that will continue to run on HCFCs, and for the servicing of that and other HCFC equipment. The Australian limit will be set at 300 ODP tonnes in 1996, reducing to 3 ODP tonnes in 2015 and to zero by 2030.

Contact: Australian EPA, fax (61) 6 274 1640



At least three national newsletters have been inspired by OzonAction News: two, in China and Uruguay, are in print and the third is being developed by the Russian Federation.

OzonAction, a quarterly publication, is available in Arabic, Chinese, English, French and Spanish.

The contents of this newsletter are provided for information and do not necessarily represent the policy of UNEP.

Please send comments and material for publication to Mr Rajendra Shende, Coordinator, OzonAction Programme, UNEP IE.

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