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OzonAction

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

Viewpoint

The Montreal Protocol works

Mrs Jacqueline Aloisi de Larderel, Assistant Executive Director UNEP, Director Division of Technology, Industry and Economics

The Montreal Protocol is an international environmental treaty that brings results. This is evident when one compares today with 1991, when the Multilateral Fund was established and UNEP became an Implementing Agency. At that time, only 55 countries were Party to the Protocol, whereas today 184 countries have joined. To date, developed countries have provided over US$1.5 billion for projects to phase out ozone-depleting substances (ODS) and pledged another US$573million for 2003–05. Global CFC consumption has fallen from about 611,000 ODP tonnes to under 139,000 ODP tonnes in 2000, and it is lower today thanks to over 4,300 projects supported by the Multilateral Fund and the phase out in developed countries. The goal of sustained, permanent ODS reduction is being realized worldwide.

However, in spite of these achievements, there is still work to do before this treaty fulfills its objective. The Montreal Protocol is succeeding, but it is not yet a final 'success'. The ozone layer will heal in about 50 years provided countries continue to meet their compliance commitments. We must continue to help developing countries adopt clean technologies, improve management capacity, enforce policies, and foster awareness. We must continue to pay special attention to low-volume consuming countries and small enterprises. We must remain vigilant and ensure that ozone remains on the political agenda or we risk undoing the accomplishments already achieved. Through the Compliance Assistance Programme, UNEP has re-organized its work to help meet these challenges during the Protocol's second phase, i.e. the compliance period for developing countries.

Now, on the eve of my departure from UNEP, I take pride in having contributed to the progress achieved under the Montreal Protocol through the OzonAction Programme. It has been a pleasure to have worked with the Multilateral Fund Secretariat, government representatives, industry groups and NGOs who, combined, 'power' this Protocol. I thank each of them for the support and cooperation provided over the years. I am confident that the Montreal Protocol community will continue to meet the remaining challenges with conviction and the spirit of partnership that makes this treaty work.

Contents

US EPA Celebrates 15th Anniversary of the Montreal Protocol

The United States Environmental Protection Agency (US EPA) recently celebrated the fifteenth anniversary of the signing of the Montreal Protocol at an event held in Washington, DC.

The 'MP-15' birthday celebration was attended by representatives from industry, government, and the health sector who have played a leading role in the US phase out of ozone-depleting substances.

Commenting on the success to date of the ozone-protection treaty, US EPA Administrator Christine Todd Whitman said, 'The Montreal Protocol proves that market-based approaches to environmental protection work—and work well. Scientists, government and industry have cooperated to create commercially-viable alternatives to ozone depleting chemicals—faster, better and cheaper than anticipated.'

Under the auspices of the Montreal Protocol, the US EPA has managed a successful domestic programme for protection of the ozone layer, working in partnership with industry to phase out the use of ODS and to identify new ozone-friendly products.

'Recovery of the ozone layer depends on continued compliance with the Montreal Protocol, particularly as developing countries begin their phase out of ozone-depleting substances', remarked Administrator Whitman. 'The USA will continue to demonstrate global leadership by supporting the use of innovative ozone-protection technologies and approaches, in both the USA and in developing nations.'

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US EPA Deputy Administrator, Linda Fisher, signs a giant birthday card for the Montreal Protocol.

News from international agencies

Fund Secretariat

The 37th ExCom Meeting approved US$26.7 million for Brazil's National CFC phase-out plan, whereby the second largest CFC consumer has committed to phase out by 2010. A national phase-out plan for Jamaica was also approved.

The meeting also considered a compliance-oriented model developed by the Secretariat, and requested the Secretariat to prepare a three-year phase-out plan for the Fund for 2003–05. Once approved, the plan will be used by implementing agencies to prepare their annual business plans. This will be the first time the ExCom institutes a global phase-out strategy to enable Article 5 countries to achieve compliance with the 2005 control measures.

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UNEP DTIE

At its 37th meeting, the ExCom approved UNEP's 2002 Work Programme Amendment, including one 'regional awareness raising' project and specific projects for 20 countries. UNEP presented a preliminary progress report on the Compliance Assistance Programme (CAP) and the 'Communication for Global Compliance with the Montreal Protocol'.

On behalf of the Government of Japan, UNEP organized a Technical Workshop on Concessional Lending (see page 6).

With assistance provided by the Government of Sweden, UNEP developed the booklet *Networking Counts: Montreal Protocol Experiences in Making Multilateral Environmental Agreements Work* (see page 10).

UNEP also organized Network meetings and a Methyl Bromide Workshop in Nairobi on the occasion of the Second Consultative Meeting for the Methyl Bromide Communication Programme (16–18 September).

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UNEP Ozone Secretariat

The Ozone Secretariat made arrangements for and serviced the 6th Meeting of the Conference of the Parties to the Vienna Convention, the 14th Meeting of the Parties to the Montreal Protocol, the 29th Meeting of the Implementation Committee, and the joint meeting of the Bureaux of the Vienna Convention and the Montreal Protocol, all of which took place in Rome, Italy, on 23–29 November 2002.

In addition to attending the official meetings, the Executive Secretary, Mr Marco Gonzalez and 10 selected delegates were granted an audience with Pope John Paul II, to seek guidance from His Holiness on actions that may lead to ratification of the Ozone Treaties by the Holy See.

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UNDP

The 37th ExCom Meeting approved 24 new UNDP activities, including a foam-sector plan for India, a refrigeration manufacturing plan for Indonesia and a national CFC phase-out plan for Brazil. Other approvals included Refrigeration Management Plans in Djibouti, Kyrgyzstan and Yemen (with UNEP), a Terminal Phase-out Management Plan for Jamaica (with Environment Canada), a terminal aerosol programme in Viet Nam, a methyl bromide technical assistance project for Ghana, and several foam projects in the Democratic Republic of Congo.

UNDP also submitted its 2001 progress report to the ExCom Meeting, highlighting completion, in 2001, of 148 investment and 76 non-investment projects, representing the elimination of 6,235 ODP tonnes.

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UNIDO

The 37th ExCom approved 11 investment projects to be implemented by UNIDO in various sectors and countries. The total value of these projects is US$9,440,368. Once implemented, they will result in the phase out of 1,334.6 ODP tonnes.

The ExCom also approved three technical assistance projects for UNIDO, worth US$445,000, to phase out six ODP tonnes, and one institutional strengthening project (Phase 6) for US$247,000.

Two Japanese bilateral projects that will be implemented by UNIDO were approved for Indonesia, for US$260,395. Once implemented, these projects will enable the country to phase out 41 ODP tonnes.

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World Bank

The 37th ExCom Meeting approved US$110,000 to fund technical assistance to strengthen Indonesia's import and export control system. The second tranches for the 2002 annual plans of the Malaysia and Thailand National CFC Phase-out Plans were also approved.

As a result of close cooperation with the Government of Thailand on the National CFC Phase-out Plan, the Bank was requested to serve as its institutional strengthening partner to ensure consistency and continuity in the country's ODS phase-out policy.

To date, the Bank has phased out more than 105,000 ODP tonnes through Multilateral Fund-approved projects, or 85 per cent of overall phase out.

Contact: Mr Steve Gorman, World Bank, 1818 H Street NW, Washington, DC 20433, USA, tel: +1 202 473 5865, fax: +1 202 522 3258, e-mail: sgorman@worldbank.org, www-esd.worldbank.org/mp

TECH◎TALK

TechTalk showcases commercially-available technologies that reduce or replace ODS, as well as technologies currently under research. Without seeking to endorse any technology or product, TechTalk covers all technologies permitted under the Montreal Protocol, including those using transitional substances (HCFCs) and not-in-kind alternatives. We welcome information and contributions from all interested parties.

REFRIGERATION AND AIR CONDITIONING

Innovative cooler avoids refrigerants and uses solar power

An Australian manufacturer has made an innovative air conditioning cooler that is ozone-friendly and requires so little power that it can be used with solar energy. The Coolmax CM50 is an evaporative cooler, so it uses no refrigerants. It also requires only 220 W when running at high speed—around 90 per cent less than conventional units. Such a low power requirement allows the unit to be solar powered. Solar power has long been seen as the ideal power source for air conditioning because it is precisely when the sun is shining that conditioning is needed. However, the high power requirements of conventional air conditioners make them impractical for solar power.

Ordinary looking Coolmax CM50 has no refrigerants and is powered by the sun.

Coolmax is presently undergoing trials in Australia and in Ethiopia, where it is being used to cool the surgery operating room in a remote medical facility powered only by solar energy. At present, most surgery rooms in Ethiopia are not air conditioned as there is insufficient power to run a conventional system. The cooler is better suited to hot dry climates than to humid ones and works well up to a wet bulb temperature of around 22 °C, with a standard rated capacity of 3 kW.

According to Coolmax's makers, the cooler's low power consumption means that it contributes very little to global warming and saves hundreds of dollars per year in electricity costs.

Contact: Mr Clive Blanchard, Coolmax Pty Ltd, 78 West St, Torrensville, South Australia, Australia 5031, Australia, tel: +61 08 8354 1062, fax: +61 08 8354 4510 e-mail: cliveb@senet.com.au www.coolmax.mx.com.au

CO_2 keeps it cool on the road

New transport refrigeration systems that employ cryogenics technology and liquid carbon dioxide (CO_2) have been announced by Thermo King, the transport temperature control systems company. The new systems achieve more efficient temperature control without the need for ozone-depleting refrigerants.

European customers have been using such units on trailers successfully for more than four years and this led the company to expand the series to include two units for trucks: the ST-CR 300 and a CO_2 hybrid unit.

The ST-CR 300, which was designed for urban markets where there is a need for multiple stops, runs entirely on the cryogenic system, using liquid CO_2 to eliminate the need for ozone-depleting refrigerants. The hybrid system utilizes a second coil to improve cooling capacity by 'pulling down' temperatures when vehicle doors are opened.

Contact: Kim Wickline, Thermo King Corporate Headquarters, 314 West 90th Street, Minneapolis, Minnesota 55420, USA, tel: +1 952 897 9461, e-mail: kwickline@kerker.com, www.thermoking.com/aboutus/pressrel/

SOLVENTS

Ozone-friendly CO_2 dry cleaning out-performs conventional solvents

A new CO_2-based garment cleaning solution gives better fabric protection and less likelihood of 'setting' of difficult stains than the traditional ozone-depleting solvents used for dry cleaning. 'Washpoint', as the new product is known, uses a combination of CO_2 and a 'revolutionary cleaning booster' to clean the full range of items cleaned with conventional solvents. CO_2 is also easier and less hazardous to handle because it is non-toxic (unless inhaled in high concentrations), non-flammable and odourless. Washpoint's developers—the UK-based ICI and Linde-Gas, based in Germany—also point out that the CO_2 used for Washpoint comes from natural sources or is a by-product of existing industrial processes (e.g. fermentation in distilleries), so the process requires only small amounts of energy to compress and distribute the CO_2 and therefore does not add to global warming.

Contact: Linde Gas, www.linde-gas.com, tel: +49 89 7446 0, fax: +49 89 7446 1144, e-mail: Juliane.elze@linde-gas.com

AEROSOLS, STERILANTS AND MISCELLANEOUS USES

Breathing easier with an ozone-friendly MDI

IVAX Corporation has received authorization in Germany to begin selling the asthma product Salamol in a non-ozone depleting HFA (hydrofluoro-alkane) propellant in IVAX-patented, breath-activated Easi-Breathe™ inhalers and standard metered dose inhalers (MDI). Salamol is the asthma drug albuterol, a beta2-agonist bronchodilator used to relieve asthma symptoms.

Contact: Mr Howard A. Goldman, IVAX Corporation, 4400 Biscayne Blvd., Miami, FL, USA, tel: +1 305 575-6043, e-mail: ir@IVAX.com, www.ivax.com

Indian firm to supply CFC-free inhalers to German firms

India's second-largest pharma company, Cipla, has reached an agreement with three German companies to supply CFC-free inhalers containing budesonide, an asthma medication. Strada, Hexal and

Fujisawa will import Cipla's inhalers into Germany and market them. If approved, Cipla's will be the first CFC-free budesonide inhaler in Germany.

Contact: Cipla Ltd., Mumbai Central, Mumbai 400 008, India, tel: +91 22 308 2891, fax: +91 22 307 0013, e-mail: corporate@cipla.com, www.cipla.com

METHYL BROMIDE

Tests confirm propylene oxide as methyl bromide replacement

Aberco, Inc. recently announced that Propozone, its propylene oxide-based product, is proving to be an all purpose methyl bromide replacement for both pre-plant and post-harvest fumigation.

Tests at a strawberry farm in California have shown that applications of Propozone are effective against fungal pathogens when compared to standard treatments, including methyl bromide. Tests performed at a flower farm further determined that Propozone was 'effective against nematodes that cause rootgall'. The company also noted that a 30 gallon per acre application of its propylene oxide pesticide successfully controlled a 'heavy infestation of mixed yellow and purple nutsedge'.

In post harvest applications, Aberco said that its Propoxide 892 product, a mixture of 8 per cent propylene oxide and 92 per cent carbon dioxide, has shown 'excellent insecticidal properties in atmospheric chambers' during recent testing.

The company noted that Propozone is expected to cost approximately US$20 per gallon, and that doses will typically average 20–45 gallons per acre.

Contact: Mr Morris Warren, Aberco, Inc., 9430 Lanham Road, Seabrook, MD 20706 , USA, tel: +1 301 459 7090, fax: +1 301 577 9041, e-mail: morriswarren@erols.com, www.aberco.com

Bio-rational alternative to methyl bromide may keep orchards happy

Researchers at the US Department of Agriculture's Agricultural Research Service (ARS) Tree Fruit Research Laboratory (TFRL) have developed a 'bio-rational' approach to combating the fungi that cause replant disease in young trees planted in old apple orchards. At present, apple growers often use methyl bromide to fumigate orchards before planting in order to sterilize soil and avoid the disease.

ARS is currently field testing use of *Pseudomonas putida (P. putida)* bacteria to rid old orchards of certain species of *Pythium, Rhizoctonia, Cylindrocarpon* and *Phytophthora* fungi.

Populations of *P. putida* occur naturally around the roots of apple trees and secrete antibiotics that prevent infection by *Rhizoctonia* fungi. The researchers are experimenting with ways of stimulating their growth. Field trials last year yielded approximately 21 kilos of fruit per tree with the 'bio-rational' approach, compared to some 27 kilos of fruit per tree with methyl bromide.

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HALONS

Halotron I extinguishers protect commercial aircraft

The Federal Aviation Administration (FAA) has approved portable fire extinguishers using the Halotron™ I clean agent as replacement for extinguishers using halon 1211 on civilian commercial aircraft. Halotron I, a registered trademark of the American Pacific Corporation, is a three-component blend based on HCFC-123. It is approved under the US EPA's Significant Alternatives Policy Programme as a substitute for halon 1211. The Halotron I extinguisher, manufactured by the Amerex Corporation US, has a net weight of 2.5 kilos and was the first to successfully complete all required FAA and Underwriters Laboratories, Inc. (UL) tests.

Halotron 1 extinguishers helping to save the ozone layer and making air travel safer.

There are thought to be around 6,500 commercial passenger carrying aircraft the size of a Boeing 707 or larger in the USA, carrying, on average, five halon 1211 extinguishers, with around the same number in the rest of the developed world.

Contact: American Pacific Corporation Halotron Division, 3770 Howard Hughes Parkway #300, Las Vegas, Nevada USA 89109 USA, tel: +1 702 735 2200, fax: +1 702 735 4876, e-mail: Halotron@apfc.com, www.halotron-inc.com

UNIDO and farmers team up to phase out methyl bromide in Brazil

Thanks to a completed investment project implemented by UNIDO, Brazil will meet the 2002 target methyl bromide freeze and protect an important segment of the agricultural economy. The 'Phasing out methyl bromide in the entire tobacco sector' project, approved by the 28th ExCom, aims to phase out 84.4 ODP tonnes of methyl bromide used by 143,715 farmers cultivating 240,218 hectares of tobacco. Methyl bromide has been used in Brazil for the fumigation of 3,003 hectares of traditional tobacco seedbeds. Importantly, the project was co-financed by the Association of Farmers (AFUBRA) and the Association of Tobacco Manufacturers (SINDIFUMO).

The technology chosen is the floating tray system, in which tobacco seedlings are cultivated in soil-less substrates in trays placed over water. This was selected after a demonstration project and trials by a selected group of farmers.

Floating tray system in Brazil avoids methyl bromide and reaps other advantages

At the beginning of the 2002 campaign, 334.8 ODP tonnes of methyl bromide were already phased out, 150.2 ODP tonnes at the farmers' own expense. This means that an additional 142,000 hectares of open field tobacco are now planted with seedlings produced without methyl bromide.

Contact: Seniz H. Yalcindag, UNIDO, e-mail: yalcindag@unido.org, www.unido.org

EU: reporting progress on ozone layer protection

Two European Union Member States, Germany and Ireland, have yet to submit reports as required under the European Community regulation on 'Substances that Deplete the Ozone Layer'. The regulation requires states to report on: steps taken to promote the recovery, recycling, reclamation and destruction of controlled substances; how responsibilities have been assigned to organizations and users to undertake these activities; steps taken to prevent leaks of controlled substances, including methyl bromide; annual leak checks for equipment containing more than 3 kg of ozone-depleting substances; the minimum qualification requirements for all personnel involved; and the quantities of used controlled substances recovered, recycled, reclaimed and destroyed.

Contact: European Commission, Directorate-General Environment, Brussels e-mail: Tom.Batchelor@cec.eu.int

India: firms in Hyderabad urged to register ODS

The Small Industries Service Institute (SISI) in Andhra Pradesh, India, recently announced that very few of the 60 companies in the city of Hyderabad using ODS in their manufacturing processes have properly registered the ODS with the institute, in spite of a requirement to complete registration by July 2002.

Under India's ODS Regulation and Control Rules 2000, all Andhra Pradesh-based firms that produce refrigeration and air conditioning equipment, fire extinguishers, perfumes, deodorants, and furniture and automobile upholstery must register with SISI.

According to SISI's Deputy Director, D. Chandrasekhar, registration 'helps us keep track of units that use ODS [and] would help the government identify those units which need monetary assistance to shift from manufacturing products using ODS to some other products'.

Contact: Ms Usha Chandrasekhar, Ministry of Environment and Forests, Ozone Cell, e-mail: ozone@del3.vsnl.net.in

Indonesia's industries to be ODS free in advance of Montreal Protocol deadline

Indonesia's Ministry of Environment has said that the country should be able to meet its ODS 2007 phase-out target—three years ahead of the Montreal Protocol deadline—even though its industry will need to phase out nearly 2,900 tonnes of ODS to become 'ODS-free'. Indonesia's government has implemented an awareness campaign, as well as programmes providing incentives to eliminate the use of ODS and to transfer alternative technologies from developed countries.

Officials from the country's Ministry of Environment said, 'we are seriously carrying out a number of measures to remove the use of ODS in industries. So far, we have focused on helping large firms remove ODS, but later on we will help small and medium enterprises and stop the import of ODS'.

Contact: Ms Ina B. Pranoto, State Ministry for Environment, Ozone Unit, e-mail: ozonenet@cbn.net.id

Malaysia's government to provide support for CFC recycling

Malaysia's Ministry of Science, Technology and the Environment (MOSTE) recently announced that it is to provide financial support and training programmes to companies working to recycle CFC-based refrigerants in the motor vehicle air conditioning and automobile cooling system sectors. The programmes, which are part of Malaysia's efforts to eliminate CFCs from these sectors by 2010, are expected to reduce the amount of CFCs emitted into the atmosphere by nearly 700 tonnes per year. There are currently more than 3 million cars in Malaysia with air conditioning systems using CFC-based refrigerants.

In a recent speech marking International Ozone Day, a MOSTE spokesperson said that Malaysia has reduced its use of CFCs by around 40 per cent, and eradicated the use of more than 4,600 tonnes of ODS in the manufacturing sector. The government hopes to completely ban the use of CFCs in the manufacturing sector by 2005.

Contact: Mr Lee Choong Min, Ministry of Science, Technology & Environment, Ozone Protection Unit, e-mail: lcm@jas.sains.my

Morocco to introduce ODS collection and recycling network

Morocco is to set up a network to collect and recycle ODS and a mechanism to assist enterprises with storage of refrigerating appliances. The two projects will be financed by the French Development Agency (FDA) under agreements, signed on 5 April 2002, between FDA and the Moroccan Ministry of Industry, Trade, Energy and Mining and the Moroccan Centre for Environmentally Friendly Production.

Contact: Mr Abderrahim Chakour, Ministère du Commerce, de l'Industrie et de l'Artisanat, email: RachidE@mcinet.gov

Montreal Protocol Parties agree highest replenishment to date at 14th MOP

The Parties to the Vienna Convention and the Montreal Protocol have agreed on a US$573 million replenishment package for the Protocol's Multilateral Fund for the 2003–05 period—the highest level of replenishment adopted to date. The funds will assist Article 5 Parties in complying with impending control measures to reduce consumption and production of ozone-depleting CFCs, methyl bromide, carbon tetrachloride and methyl chloroform. Other important issues were discussed at the 14th Meeting of the Parties, held recently in Rome, including the following:

- Parties' status of compliance with control measures as well as their status of reporting of data and information and of reporting on their ODS licensing systems;
- authorization of essential use nominations for 2003 and 2004;
- monitoring of international trade and prevention of illegal trade;
- status of ODS destruction technologies;
- interaction between the Implementation Committee and Executive Committee;
- decision on reclassification of Armenia as an Article 5 Party, and on development of a phase-out policy for chillers;
- relationship between the Montreal Protocol and the Convention on Climate Change;
- Establishment of an extra-budgetary Trust Fund for the purpose of research and systematic observation of the ozone layer.

The meeting also took decisions on providing guidance to the Ozone Secretariat on its relationship with the World Trade Organization and on the issue of the Global Harmonized System for Classification and Labelling of Chemicals with the Economic and Social Council.

Contact: Mr Marco González, Ozone Secretariat, fax: +254 2 623 913/623 601, e-mail: marco.gonzalez@unep.org, www.unep.org/ozone

DIALOGUE AND DISCUSSION

Meetings/Conferences/Workshops

Peru joins the global efforts against illegal trade in ODS

Thirty-two experts from five institutions participated in practical, hands-on demonstrations on the identification of ODS containers and ODS containing equipment at the first of a series of workshops held in Lima, Peru, on 4–6 July 2002. The use of ODS identifying equipment was also demonstrated. The workshops are expected to train about 200 national experts in fighting illegal trade in ODS.

Contact: Carmen Mora Donayre, NOU for Peru, e-mail: camorad@minproduce.gob.pe

Africa takes significant step in combating illegal trade in ODS

Africa has taken a major step in addressing illegal trade in ODS. In less than one year, around 600 Customs Officers from nine African countries have been trained to identify ODS containers and ODS containing equipment, and to implement their licensing systems.

The national training sessions, which were organized by UNEP in cooperation with local governments, build on existing legislation to comply with the Montreal Protocol.

Contact: Mr Jeremy Bazye, UNEP Regional Network Coordinator for Africa, e-mail: Jeremy.Bazye@unep.org, tel: +254 2 624 281, fax: +254 2 623 165

Investigating concessional lending for ozone protection

Participants at a Technical Workshop on Concessional Lending, held on 22 July 2002 in L'Estérel, Quebec, Canada, focused on practical examples of where concessional lending/innovative financing has worked both inside and outside of the Multilateral Fund, and looked at applicable financial mechanisms to satisfy the diversified financial needs of Article 5 countries in achieving ODS phase-out targets. UNEP DTIE assisted the Government of Japan with the organization of the workshop, which was designed and conducted in cooperation with the MLF Secretariat, UNDP, UNIDO and the World Bank. The workshop discussions focused on the remaining areas under the Multilateral Fund, i.e. SMEs, large projects in 'residual' sectors that have not yet been fully addressed (e.g. end-user sector), and sectors that are only eligible for partial funding (e.g. aerosols, solvents). It also included projects that, although eligible, did not come forward due to reasons such as a lack of counterpart funding or the nullification of incremental costs due to operational savings. The workshop proceedings are available from the OzonAction Programme.

Contact: Mr Rajendra Shende, UNEP DTIE OzonAction Programme, e-mail: ozonaction@unep.fr

World Summit on Sustainable Development reinforces ozone protection

One of the major outcomes of the '2002 Earth Summit', held in Johannesburg, South Africa on 26 August–4 September, is a Plan of Implementation which contains targets and timetables to spur action on a wide range of issues including reinforcement of the need to provide continued strong support for implementation of the Montreal Protocol, as follows:

States have common but differentiated responsibilities, with actions at all levels to:

- facilitate implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer by ensuring adequate replenishment of its fund by 2003/05;
- further support the effective regime for the protection of the ozone layer established in the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol, including its compliance mechanism;
- improve access by developing countries to affordable, accessible, cost-effective, safe and environmentally sound alternatives to ozone-depleting substances by 2010, and assist them in complying with the phase-out schedule under the Montreal Protocol, bearing in mind that ozone depletion and climate change are scientifically and technically interrelated; and
- take measures to address illegal traffic in ozone-depleting substances.

Contact: UN Website for the Johannesburg 2002 Summit, www.johannesburgsummit.org

Estonia—brisk response to an old-appliance help line

A telephone number that can be used free of charge by anyone in Estonia wanting to get rid of old refrigeration equipment has had a brisk response. Calls were received from more than 2,000 people wanting to hand over their old refrigerators—a remarkable result for a country with a population of less than 1.5 million. By the end of July, around 1,000 refrigerators had been collected, and 1,000 were on a waiting list.

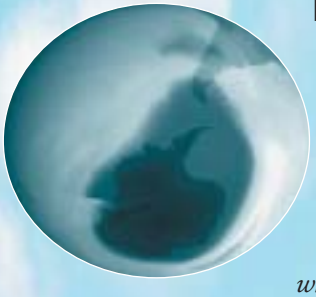
The free telephone number was part of an awareness-raising campaign organized by the Estonian Ozone Office in cooperation with the Estonian Ministry of the Environment, Philip Morris Estonia, waste handling companies and local authorities. The campaign was conducted under the Institutional Strengthening project funded by the Multilateral Fund and coordinated by UNEP; it lasted from 5 June to 1 August.

Estonia's Ozone Office organized a successful collection of old CFC refrigerators

The event also involved all of the media, with advertisements being repeated in the press, interviews on radio and an ozone cartoon shown more than 35 times on television. The campaign was accompanied by shows in four towns where tents were set up housing demonstrations of real-time NASA images on the thickness of the ozone layer. These were obtained from the Internet and were projected on a large screen. Scientists from the Tõravere Observatory of the University of Tartu gave a 30-minute presentation on the need to protect the ozone layer and the harmful effects of UV radiation on human health and other organisms, as well as a brief description of the status of the ozone hole in the northern hemisphere. After the presentation, the audience was given an on-site demonstration of CFC removal from used refrigerators by companies which had received relevant equipment and training under the UNDP Recycling & Recovering project.

Contact: Mr Inari Truumaa, Estonian Ozone Office, e-mail: inari@klab.envir.ee

SAVE O_3UR SKY: Protect Yourself; Protect the Ozone Layer



16 September—International Day for the Preservation of the Ozone Layer

The sixteenth of September is the International Day for the Preservation of the Ozone Layer, *commemorating the date, in 1987, on which the Montreal Protocol was signed. Each year, on that day, countries are invited to initiate national activities to promote the objectives of the Montreal Protocol and its Amendments.*

Unlike many commemorative days, 'Ozone Day' produces important tangible results. Of particular importance are the activities of National Ozone Units in developing countries, by which the NOU's transmit targeted messages and information to key stakeholder groups and to the general public. Our feature below gives some examples that illustrate the ways in which countries, both developing and developed, commemorated 'Ozone Day' in 2002.

For more information, contact: OzonAction Programme, UNEP DTIE, Tour Mirabeau, 39–43 quai Andre Citroën, Paris 75739 Cedex 15, France, tel: +33 1 44 37 14 59, fax: +33 1 44 37 14 74, www.uneptie.org/ozonaction

Bangladesh: special messages from President and Prime Minister

The Bangladeshi Government highlighted the importance of Ozone Day and increased public awareness by special messages from the country's President and Prime Minister. The Government also published special supplements in national daily newspapers, put special programmes on radio and television, ran art and essay competitions on ozone protection, and convened seminars.

Colombia: Ozone Day extended to ozone week!

Colombia's NOU organized activities that extended the Ozone Day to the entire week of 16–22 September. The NOU and Ministry of Environment (MOE) provided the press with ozone information to inform the general public. Officials also participated in interviews broadcast on six national radio stations and national newspapers while television provided extensive coverage.

The NOU, MOE and the National University organized conferences on the national phase-out strategy, ODS alternatives and UV radiation. Publications, including a special issue of the *Boletin Ozono*, decals for automobile windscreens, stickers, flyers and other materials were also distributed.

Egypt: high-level conference and ozone research awards

The main event in Egypt's celebration of Ozone Day was a high-level conference at Cairo University. The theme of the event

was 'The Role of Science and Research in Protecting the Ozone Layer and the Environment'. Awards were presented to winners of an ozone research competition, open to university professors and researchers.

Georgia: taking the message to the people

Georgia's NOU organized a meeting on ozone protection, and arranged for a national television channel to broadcast a special programme describing the problem of ozone depletion and possible solutions. Two large billboards were displayed in Georgia's capital, Tbilisi, one bearing the message 'Save the Ozone Layer' and '16 September is the Day for Preservation of the Ozone Layer', the other saying 'Save the Ozone Layer, It Will Save You'.

India: targeting tomorrow's scientists and industry today

Departments of Environmental Studies in Indian universities and an NGO celebrated Ozone Day with an awareness-raising seminar for post-graduate students and poster competitions. The awareness-raising seminar targeted post-graduate students—tomorrow's scientists.

Industrial concerns Hidecor and IT Power India Ltd. ran a training programme for refrigeration and air-conditioning technicians from in and around Pondicherry, demonstrating how to retrofit existing CFC appliances with non-ODS alternatives including hydrocarbons, and how to service new appliances.

Indonesia: a comprehensive Ozone Day programme

Indonesia's Ministry of Environment inaugurated a comprehensive Ozone Day campaign, organized by the country's NOU, with a press conference on 16 September. Promotional materials were distributed, including brochures, leaflets and greeting cards featuring the winners of a children's painting competition organized by UNEP. A trash container painting competition was also organized by the NOU in cooperation with the local government of Jakarta.

Other events in the programme included:

- a seminar in Denpasar, Bali, with speakers from government and business;
- demonstrations to promote hydrocarbons as an alternative refrigerant;
- featuring of ozone protection on television talk shows; and
- launch of a cooperative Green Plantation Programme by the local government of Jakarta, Ozone Magazine and PT. Coca-Cola.

Macedonia: a song for the future

Macedonia's Ozone Unit produced a song, *Choice for the Future*, as part of the national celebration of Ozone Day. The song, available in both Macedonian and English ver-

. . . SAVE O_3UR SKY: be ozone friendly (continued)

16 September—International Day for the Preservation of the Ozone Layer

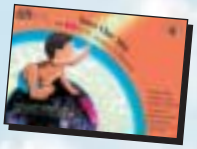
sions, was disseminated to the national TV and radio and has been played frequently on their programmes. Song and lyrics are available on the UNEP OzonAction web site.

Malaysia: saying 'NO to CFC' to build awareness

At a specially organized seminar, Malaysia's Minister of Science, Technology and Environment launched a pamphlet entitled *'The Montreal Protocol and You'*, an ozone protection poster, and a brochure on mobile air conditioning. The seminar addressed a wide range of topics including:

- national phase-out strategy;
- controls on ODS imports;
- roles and responsibilities of chemical suppliers;
- recovery and recycling; and
- phase out of methyl bromide.

The NOU also printed and disseminated stickers with the message 'Save Our Sky, Say NO to CFC, reduce UV Radiation'.



Moldova: Ozone Office uses a motto to reach the public

Moldova celebrated this year's Ozone Day under the motto *'We shall protect the Ozone Layer'*. The Ozone Office prepared articles for the national newspapers, and all national television channels showed a public service announcement featuring the motto and giving the telephone number of the Ozone Office for people wanting to learn more. The national radio channel repeatedly broadcast a one minute message with the same theme.

The Ozone Office produced and disseminated a brochure for teachers and students. 'Ecological hours' were also organized in schools and higher educational institutions.

Mongolia: getting the UN message across

Mongolia's National Ozone Office translated the UN Secretary General's Ozone Day message and had it printed in the main daily newspaper. The NOO also translated information from the OzonAction website and assisted the media in dissemination of this information.

The Director of the Ozone Office gave a televised interview, accompanied by the winners of a South Asia Ozone Poster Competition whose works were shown in a special exhibition.

A banner bearing save the ozone layer messages was displayed in the capital's central square and posters were placed on public transport vehicles.

Romania: media and scientists raising awareness

The NOU translated UNEP's OzonAction Programme booklet *Saving the Ozone Layer: Every Action Counts* into Romanian, and printed and disseminated 500 copies of the publication. National radio broadcast a special programme about ozone protection and a national newspaper ran a feature article on the subject.

The Ministry of Ecology, Constructions and Territory Development and the Ozone Office organized a press conference that included the participation of notable scientists and national technical experts.

Rwanda: an ozone seminar

Rwanda's NOU organized a one-day seminar attended by representatives from the Office of the President, the Prime Minister's Office, the Transitional National Assembly, all Government ministries, NGOs, UNDP, FAO, UNICEF, WHO, the media, civil society and refrigeration technicians.

United Arab Emirates: high-level interviews mark Ozone Day

The Assistant Under-Secretary at the UAE Meteorological Department of the Ministry of Communication and UAE Permanent Representative at WMO marked Ozone Day by giving interviews in leading national and regional newspapers and contributing articles on ozone science and health effects.

OzonAction celebrates Ozone Day in the sky

UNEP DTIE's OzonAction Programme created a partnership with the Mairie de Paris (city government), the French National Centre for Scientific Research (CNRS), Eutelsat (an international telecommunications company) and Aerophile (a global specialist in captive balloons) to celebrate this year's Ozone Day celebration at the site of the world's biggest tethered balloon, in the heart of Paris, France. This unusual site was chosen because the balloon is able to place participants closer to the stratosphere, both physically and symbolically, and recalls the ozone sonde balloons used to gather ozone data. The key speakers were: Professor Mégie, President of CNRS and Co-Chair of the UNEP Scientific Assessment Panel; Jacqueline Aloisi de Larderel, UNEP Assistant Executive Director; Laurence Musset, Head of the Chemical Substances and Preparations Office, French Ministry of Environment; and Jean-Louis Etienne, Polar explorer. The celebration included:

- a press release from UNEP for members of the French and international press;
- a press conference organized at the balloon's launch point by the OzonAction programme;
- a free ride in the balloon for all participants, and television interviews conducted aloft; and
- distribution of OzonAction posters to schoolchildren visiting the site.

More extensive outreach was ensured when the Mairie de Paris, at UNEP's suggestion, placed an ozone protection message on more than 300 automatic sign boards throughout Paris.

Representatives from major newspapers, magazines, television channels and radio stations attended the balloon event and, based on feedback from the participating media organizations, the total audience for the media coverage of the Ozone Day event was estimated to have been more than 20 million people.

Contact: OzonAction Programme, UNEP DTIE, tel: +33 1 44 37 14 50, fax: +33 1 44 37 14 74, e-mail: ozonaction@unep.fr, www.uneptie.org/ozonaction

Montreal Protocol collection comes to Harvard

The Environmental Science and Public Policy Archives (ESPPA), a unit of the Harvard College Library, Harvard University, has recently accepted a significant collection of Montreal Protocol materials that were gathered by Stephen O. Anderson and Madhava Sarma while writing their new book *Protecting the Ozone Layer* (United Nations Environment Programme—Earthscan Press, 2002) (see OAN 42). The collection includes publications, memoranda, videotapes, photographs and memorabilia from both private and public sectors.

The Harvard University Science Center in Cambridge, Massachusetts houses the Environmental Science and Public Policy Archives, an extensive collection of materials relating to international environmental governance.

The Montreal Protocol materials are an important addition to Harvard's extensive collections; the University is becoming an international archival centre for the history of ozone diplomacy and other environmental topics. Holdings include the Edward A. Parson Stratospheric Ozone Collection, the papers of Maurice F. Strong, and a number of other notable collections that are indexed and available for public use at http://oasis.harvard.edu/env.html.

Harvard University welcomes inquiries regarding donations of important materials related to ozone policy and science or other facets of international environmental governance and related scholarship. All materials are accepted through the Environmental Science and Public Policy Archives (http://hcl.harvard.edu/environment).

For information about making a donation, please contact George E. Clark (clark5@fas.harvard.edu).

For information regarding access to collections contact Amy Christensen (acchrist@fas.harvard.edu).

Science news

2002—a smaller ozone hole, but scientists counsel caution

Although the Antarctic ozone hole observed in October 2002 is the smallest since 1988, scientists are warning that the phenomenon is not likely to be an indication of recovery of the ozone layer. Instead, they say, it is more likely to be linked to unusual global weather patterns.

The ozone hole observed in the first half of October this year had an area of less than 10 million square kilometres, much smaller than in 2000 and 2001. It has also, unexpectedly, split into two separate holes, described by one scientist as being 'like a pair of dumb-bells'.

Explaining the phenomenon, scientists say that atmospheric temperature is a key factor for the rate of ozone depletion. In August and September, the air above the pole tends to cool and form a vortex that isolates this colder air from the air at lower latitudes. In these conditions, polar stratospheric clouds (PSC) can form, and it is then that rapid ozone depletion begins, through a series of catalytic reactions. However, in 2002, unusual patterns of atmospheric circulation around the vortex caused an increase in temperatures within the vortex, reducing formation of PSC during mid-October and resulting in correspondingly less ozone depletion. According to the World Meteorological Organization (WMO), this year's findings confirm what it has emphasized in the past: that the size, depth and persistence of the ozone hole can be expected to vary substantially from year to year, and that one year's observations cannot be interpreted as the beginning of a trend.

Contact: Dr Michael Proffitt, Senior Scientific Officer of WMO, e-mail: proffitt@wmo.ch, www.wmo.ch/web/arep, gawozobull02.html

VINTERSOL: latest European field study campaign

Vintersol (Validation of INTERnational Satellites and study of Ozone Loss), the latest European field campaign to study ozone loss, will run from 2002 to mid-2004. It will follow on from three previous European campaigns and, like them, relies on joint support from national funding agencies and from the European Community's DG Research.

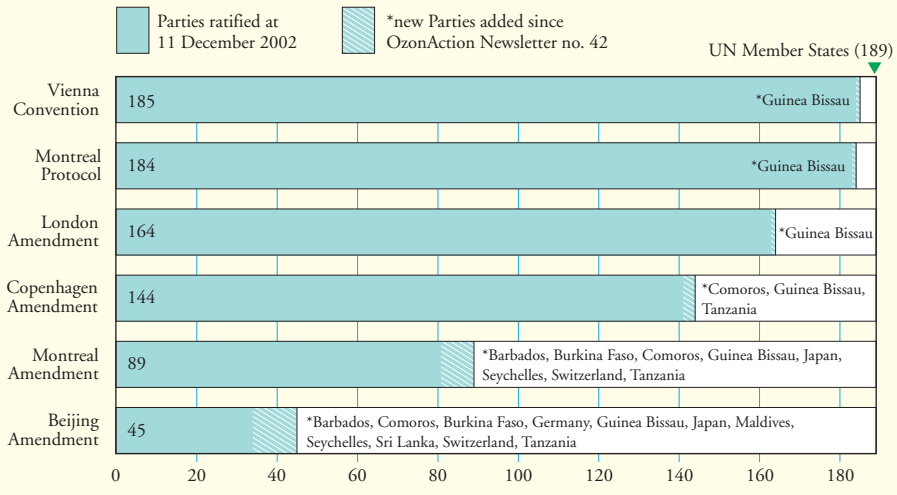
Involvement of several new European satellite instruments is an important dimension of Vintersol although the campaign will also make use of instruments carried by aircraft, ozonesondes, balloons and ground-based instruments. The studies will focus on five main themes:

- polar ozone loss;
- ozone at mid-latitudes;
- UV radiation;
- tropical (atmospheric) chemistry and dynamics; and
- validation of satellite instruments.

Contact: European Ozone Research Coordinating Unit, 14 Union Road, Cambridge CB2 1HE, UK, fax: +44 1223 763818, e-mail: general@ozone-sec.ch.cam.ac.uk, www.ozone-sec.ch.cam.ac.uk

Photo: NASA TOMS

The progess in ratification of the Montreal Protocol and its amendments
(as at 11 December 2002)



Source: Ozone Secretariat, www.unep.org/ozone/ratif.shtml

The National Ozone Unit Interview

This is one of a series of articles featuring the views of national ODS officers

Lic. Francisco Argenal

Coordinador, Unidad Técnica del Ozono, Secretaría de Recursos Naturales y Ambiente, Honduras
e-mail: utoh@sdnhon.org.hn

Based on your country's reported data for 1999, the 13th Meeting of the Parties (October 2001) declared that Honduras was in potential non-compliance with the freeze of CFC consumption for the 1999–2000 control period. Honduras soon returned to compliance in 2000 and remained in compliance in 2001. What measures brought your country back into compliance?

Non-compliance in 1999 was due to the lack of knowledge about the freeze and a lack of confidence among some CFC importers. This led to misunderstandings and massive importing ensued. In 2000 and 2001, the required CFCs were provided from store, and imports decreased. The decrease in CFC demand was reinforced when the government provided significant technical and financial assistance for a national public awareness campaign. During the campaign, demand for refrigeration and air-conditioning equipment using alternatives to CFC increased, and technicians improved their handling of CFCs.

In your opinion, what are the biggest compliance challenges facing Honduras and Central America in the 2003–05 period?

The major challenge is the end-user sectors and the public sector, particularly hospitals. Reduction of use of methyl bromide appears more complicated, since methyl bromide is used in the production of non-traditional crops which are sources of income in the region.

What policies have had the greatest impact on helping Honduras comply with the Montreal Protocol?

We believe that public awareness has been an important force for compliance with the Montreal Protocol. Even if standards regulate CFC imports and handling in the country, their enforcement is not possible without citizen involvement. We have also relied on UNEP handbooks, newsletters and other publications, mainly to develop and implement the public awareness campaign. Advice has also been provided by regional ozone officers from the Latin-American and Caribbean network.

How is your country assisting small and medium-sized enterprises to avoid CFCs and use alternatives?

We have discussed Honduras' commitments under the Montreal Protocol with company managers, and they have been fairly receptive. In the service sector, we have participated in workshops by means of a mobile air-conditioning plan and by implementation of an RMP providing appropriate training to technicians.

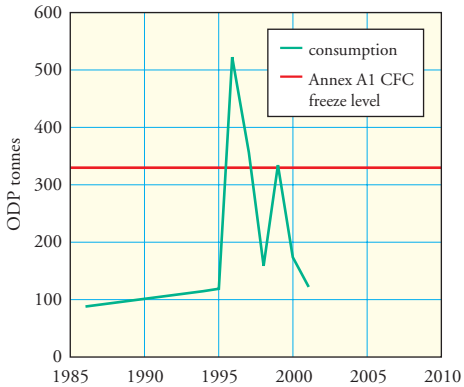
The pricing of CFCs relative to alternatives often plays a determining role in the speed of adoption of ODS alternatives in most countries. What effect does the current pricing regime in your country have on the national phase out of ODS in Honduras?

Pricing is a difficult factor to change in a developing country like Honduras. Our economy cannot afford to subsidize alternatives, and we believe that a rise in CFC prices may foster illegal trade. We have therefore decided to ban the import of CFC-based air-conditioning and refrigeration equipment. A licensing system has also been established for import and export.

How will Honduras sustain the phase out in the longer term (i.e. beyond 2005)?

By means of efficient enforcement of national standards regulating imports, exports, ODS trade and use. We will also pursue the public awareness campaign and implement projects approved by the Multilateral Fund. Above all, we rely on assistance from the implementing agencies and the technical and financial assistance from the Multilateral Fund to manage new projects such as the RMP review or end-users plans.

Trend in CFC consumption in Honduras



New publications

Networking Counts, Montreal Experiences in Making Multilateral Environmet Agreements Work by the Swedish International Development Agency and the OzonAction Programme describes the Regional Networking concept under the Montreal Protocol, shares experiences and lessons learned, and explains how networking could assist with the implementation of other multilateral environmental agreements. It is available on-line at www.uneptie.org/ozonaction/library/policy

Forthcoming meetings

Earth Technologies Forum, 22–24 April 2003, Washington, D.C., www.earthforum.com

Papers and 'poster summaries' presented at the Conference on Alternatives to Methyl Bromide (Sevilla, Spain, 5–8 March 2002) are now available at http://europa.eu.int/comm/environment/ozone/conference/

This newsletter is available online at: www.uneptie.org/ozonaction

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