



zonAction



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

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View point

10th Meeting of the Parties



Mrs Nadia Makram Ebeid, Minister of State for Environmental Affairs, Egypt

The 10th Meeting of the Parties to the Montreal Protocol will be held in Cairo, 16–24 November 1998. The Government of Egypt is proud to be a Party to this international agreement. In our continued efforts to meet our global environmental challenges, it is important to keep up

our support and commitment to the protection of the ozone layer.

By next year, the first control measures will come into effect for developing



Dr Klaus Töpfer, Executive Director, UNEP

The 10th Meeting of the Parties to the Montreal Protocol comes at an encouraging moment: UNEP data suggests that most Article 5 countries will achieve a freeze in the production and consumption of CFCs

in 1999. This will be an important event, since responsibility for protecting the ozone layer lies equally with developing and developed countries.

I would like to commend those developing countries that are phasing out ODS ahead of the Protocol

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The 1999 freeze in production and consumption of CFCs in developing countries: 8 months to go

countries. These will have a significant impact on the production and consumption of ozone-depleting substances (ODS) in the developing world. The timing coincides with a progressive lifting of trade barriers that also presents potentially significant consequences on quantities of ODS produced and consumed worldwide.

The Multilateral Fund was created to assist developing countries in this regard. It is our hope that the industrialized countries will continue to support the Multilateral Fund in such a way so as to bridge the transition and minimize its economic and social implications on developing nations.

The Cairo meeting is expected to generate and integrate further inputs and investments to protect our ozone layer. The ultimate goal is to assist Article 5 countries in meeting their commitments under the Montreal Protocol.

requirements. This sends an important signal to the global environmental community: real commitment can lead quickly to real achievements. But it is also important to ensure that the necessary policies and legislation are put in place to sustain efforts to protect the ozone layer. Long-term success depends on such support.

The challenge for developing countries is only just beginning. A freeze on the production and consumption of halons and methyl bromide in 2002 will follow the 1999 freeze in CFCs. There is new concern about increased halon concentrations in the atmosphere, and that the use of methyl bromide may increase in a larger number of countries and perhaps also in new applications.

I urge Parties to consider the challenges that will be faced by developing countries over the next ten years. The decisions to be made at this meeting will be critically important to meeting these challenges, and thus to continuing the careful programme of actions needed to protect the ozone layer.

25th ExCom approves activities worth US\$35.4 million

The 25th Meeting of the Executive Committee (ExCom) of the Multilateral Fund of the Montreal Protocol was held in Montreal, 29–31 July 1998, and was preceded by parallel meetings of the sub-committees on Project Review and Monitoring, Evaluation and Finance. The ExCom meeting recognized that although low-volume consuming countries (LVCs) and small and medium enterprises (SMEs)

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Below: the Honourable Babu Lal Marandi, Minister of State for Environment and Forests at the International Ozone Day celebrations in Delhi, India



Winners of the international Children's Painting Competition organized jointly by UNEP's OzonAction programme and the Egyptian Environmental Affairs Agency are announced—see page 8

News from international agencies



Fund Secretariat

The Fund Secretariat communicated the decisions of the 25th ExCom meeting to governments, distributed

the final report of the meeting, and arranged transfer of resources from the Treasurer to the implementing agencies.

The contributions that had been paid for 1998 as at 28 July were US\$46.8 million, some 30 per cent of those due for 1998. Six country programmes were approved in the Meeting. The total approved for projects and activities was US\$35.43 million, which will lead to the phase out of more than 4000 ODP tonnes

The 25th ExCom Meeting asked the Secretariat, in collaboration with the implementing agencies, to make proposals on indicators for evaluating business plan and non-investment project performance.

The Secretariat held a workshop on progress reports and business plans for implementing agencies, 27–28 August 1998. It also began preparations for the 26th ExCom meeting to be held 9–13 November 1998 in Cairo, Egypt.

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UNEP IE OzonAction Programme

The UNEP IE OzonAction Programme organized meetings of ODS Officers' Network for Southeast Asia and the Pacific, and joint French and English-speaking Africa (see page 10). The first in a series of training workshops on good practices in refrigeration was also held in Guyana (see page 9).

In cooperation with the Egyptian Environmental Affairs Agency, UNEP is organizing a Children's Painting Competition which will culminate during the 10th Meeting of the Parties in Cairo (see page 8).

In September UNEP disseminated to all NOUs version 6 of the OAIC-DV database reference tool and two publications, *Government Strategies to Phase Out Ozone Depleting Refrigerants: Four Case Studies from the Nordic Countries* and *Guidebook on codes of Good Practice—Refrigeration Sector*.

The 25th ExCom approved UNEP's work programme amendment at a value of US\$500 000 consisting of institutional-

strengthening and training projects for six countries. UNEP also received approval for the country programmes of Chad, St Vincent and the Grenadines, Moldova and Yemen.

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UNEP Ozone Secretariat

The Secretariat, in collaboration with UNEP

Information and Public Affairs and UNEP IE, helped promote awareness about ozone depletion through International Ozone Day celebrations (see page 7). It distributed the working documents for the 18th Meeting of the OEWG, the 10th Meeting of the Parties (see page 8), the 2nd Meeting of the Bureau and the 21st Meeting of the Implementation Committee to be held in Cairo, Egypt. As requested by the 1st Meeting of the Bureau, the Secretariat wrote to all governments inviting ratification of the London, Copenhagen and Montreal Amendments. It also provided assistance to the three panels involved in preparing the 1998 ozone assessment.

The Secretariat participated in meetings of the ExCom (see page 1), the Environmental Effects Assessment Panel and the ODS Officers for Southeast Asia and the Pacific, and in workshops on Environmental Compliance and Enforcement (Asia-Pacific Network) and of the African ODS Network Officers.

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UNDP

The 25th ExCom meeting approved

US\$10.3 million for 36 UNDP investment projects that will eliminate 1,242.5 ODP tonnes in 13 countries (Argentina, Brazil, China, Dominican Republic, El Salvador, Indonesia, Malaysia, Mexico, Moldova, Morocco, Philippines, Thailand, Trinidad and Tobago). In addition, US\$0.9 million was approved for renewal of institutional strengthening projects in Kenya, Mexico, Thailand, Uruguay and Venezuela, as well as project preparation funds to develop

methyl bromide demonstration projects in Lebanon, the Philippines and Sri Lanka.

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UNIDO

The 25th ExCom approved 30 UNIDO projects worth some

US\$12.9 million. They include 16 investment projects in the foams, aerosol, refrigeration and solvents sectors; 13 demonstration projects in the methyl bromide sector; demonstration and phase-out projects in four countries for which approval had been pending ratification of the Copenhagen amendment; and one institutional-strengthening project.

UNIDO participated in the workshop organized by the secretariat on progress and financial reports and business plans, and made a presentation on SMEs and the Methyl Bromide Sector at the ODS Officers Network Meeting for Southeast Asia and the Pacific (see page 10).

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World Bank

At the 25th Meeting in July, investment projects for Argentina, China, India,

Pakistan, Thailand, Tunisia and Turkey, a demonstration project in Chile and institutional strengthening in Chile and Tunisia were approved by the ExCom. Other approved projects included two from Argentina and Thailand, deferred from the 24th Meeting. The Bank's total approvals for 1998 now amount to US\$10.78 million (including US\$339,000 for project preparation funds) resulting in an ODP reduction of 1,085 tons. The World Bank is responsible for almost 70 percent of the Multilateral Fund's total ODP phaseout to this point, and nearly 60 percent of disbursements.

The MP team would like to welcome Steve Gorman to the group who recently transferred from UNEP. Steve will be heading the Unit as Bill Rahill's replacement.

Mr Steve Gorman, World Bank, 1818 H. Street, N.W. Washington D.C. 20433, USA, tel: +1 202 473 5865, fax: +1 202 522 3258, e-mail: sgorman@worldbank.org, Internet: <http://www-esd.worldbank.org/mp/>

Industry and technology updates

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

AEROSOLS

New CFC-free inhaler technology for asthma patients

3M and Forest Laboratories are co-developing a flunisolide metered-dose inhaler (MDI) that does not use CFCs as a propellant. Flunisolide is a steroid-based medication used in the long-term control of asthma and currently marketed by Forest as Aerobid™. The propellant used is HFA-134a.

In 1994, after investing more than US\$130 million in research, 3M developed the first CFC-free MDI. The technology being used to reformulate Forest's flunisolide product is one of several under development. Others include oral tablet medication, dry-powder inhalers and mini-nebulizers. 3M is currently sharing its CFC-free MDI technology with 10 pharmaceutical companies in the reformulation of 13 asthma medications. These include CFC-free beclomethasone and albuterol MDIs being co-developed with Hoechst Marion Roussel, and a CFC-free albuterol MDI marketed in the US by Schering-Plough as Proventil™ HFA.

Contact: 3M, fax: +1 612 897 7583;
Colle & McVoy: e-mail: kfuller@collemcvoy.com

REFRIGERANTS

New refrigerant oil saves energy and reduces maintenance

The Philippine Seven Eleven Corporation claims that converting its systems to PERG 1000 refrigeration lubricant has produced savings of 17 to 22 per cent in energy costs and reduced maintenance. Overall, the company claims that it is saving some PHP25,000 a month in each of its 120 stores in the Metro Manila area of the Philippines.

PERG 1000 is produced by the Pen Airconditioning Company in Australia. Pen claims that its lubricant oil can be used with all refrigerants, thus simplifying the job of industry technicians. The company also claims that its product does not harm seals, gaskets or hoses, is non-hygroscopic, non-toxic, reduces noise, prolongs machinery life and is safe for the

environment. The product has been used in refrigeration and air-conditioning systems in many different environments, including stores and supermarkets, laboratories, the dairy industry, ships, motor vehicles and office buildings.

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e-mail: venkat@globec.com.au

New coolers use hydrocarbons

Queensland-based manufacturer Maslen Australia has produced a new chiller for pre-packed meat which uses Esantyl ER22 hydrocarbon refrigerant.

The MD1800D is a self-contained 180-mm wide self-service display case with double-glazed sliding doors that plugs directly into a power outlet. Mounted on heavy-duty castors with a hot gas condensate dissipation tray, it requires minimum installation. The same company also produces a 1200mm-wide, high-humidity, fruit and vegetable model, the MD1200D.

The company claims that the hydrocarbon refrigerant, apart from being environmentally-friendly, offers about 20 per cent lower compressor running costs, and lower compressor discharge pressure, temperature and noise.

Contact: Maslen, fax: +81 7 5491 6836

METHYL BROMIDE

Natural plant products as substitutes

A consortium of scientists from South Africa, Israel and the United States are developing natural plant volatiles that could serve as alternatives to methyl bromide. Charles L. Wilson of the US Department of Agriculture's Agricultural Research Service and Eli Shaaya of the Volcanic Centre in Bet Dagan, Israel, are studying the effect these compounds have on soil-borne pathogens, fruit and grain storage facilities. South African plant pathologist Johan Combrink and his colleagues are studying a number of South African plants for compounds that could also possibly replace methyl bromide. Research by the USDA has found that benzaldehyde, a naturally-occurring plant compound, combined with nitrogen can control four major soil pathogens. Studies by the Israeli

The policy mentor programme: an update

To assist developing countries in meeting their 1999 commitments, the UNEP IE OzonAction programme is developing a policy advice network based on experts or 'mentors' provided by the developed countries (see OAN 27). Developed country mentors will be matched with counterparts in Article 5 countries which seek help with national policy-setting under the Protocol. Mentors will make themselves available on a regular basis to answer questions posed by their Article 5 counterparts, provide advice and insights, and share experiences on effective policy-setting. Additional support could be negotiated between the mentor and the Article 5 counterpart. The programme will operate on a voluntary basis.

To date, the following countries have nominated individuals to participate as policy mentors: Canada, Belgium, Germany, Israel, New Zealand and the United States.

The OzonAction Programme will put the Policy Mentor programme into action in early 1999 through the Regional Networks of ODS Officers. UNEP is still seeking additional nominations for mentors from developed countries. Those interested should contact the OzonAction Programme.

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Hot peppers used to break nematode and disease pressure in rotation with melons and tomatoes



counterparts have revealed that several essential oils extracted from herbs and spice plants are effective as fumigants for grain and dry stored food products. South Africa's contribution focuses on research to find natural plant compounds that fight pathogens that attack pome fruit which are now controlled with synthetic substances. The consortium believes that this collaborative research effort will produce patentable products that can be commercialized.

Contact: USDA ARS, tel: +1 301 504 5987

FOAMS

Liquid CO₂ shows its faces

New technologies based on foam blowing with liquified carbon dioxide (LCD) are proving to have significant economic and environmental advantages over other replacement methods, while providing foams of low density and high quality. There are, however, two disadvantages: relatively high investment cost and more complicated process control.

LCD technology is commercially viable for producing foam grades in the 15–35 kg/m³ range; some 20 slabstock units are already in production worldwide, and a further 20 or so are planned.

The use of liquid or gaseous CO₂ has not grown so rapidly in the production of flexible moulded foams, probably because water-based formulations are cheaper. Even so, it is estimated that 20–30 plants are already in operation.

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RECYCLING AND RECOVERY

New rules and fact sheet on recycling substitute refrigerants

The US EPA is proposing to amend the rule on refrigerant recycling in relation to substitutes for CFCs and HCFCs. The proposed rule would exempt some substitute refrigerants from the current prohibition on venting substitute refrigerants to the atmosphere on the basis that their release does not pose a significant threat to the environment. In addition, the US EPA is proposing to strengthen and clarify existing leak repair requirements for equipment containing CFC and HCFC refrigerants. This will significantly reduce emissions of



A factsheet on recycling of refrigeration substitutes can be read on line or downloaded in PDF format from the US EPA Web site.

environmentally-harmful refrigerants. The proposed rule is contained in the *Federal Register*, 11 June 1998, Vol. 63, No. 112, pages 32044–99.

The US EPA has issued a fact sheet that explains how the agency is currently applying its venting prohibition to different substitute refrigerants and to the various types of air-conditioning and refrigeration equipment. The fact sheet and additional information can be found on the agency's Stratospheric Protection Division Web Site.

Contact: US EPA, fax: +1 202 565 2096,
<http://www.epa.gov/ozone/title6/608/subrecsm.html>

Industry alliance supports recovery and recycling of HFCs

The US Alliance for Responsible Atmospheric Policy, an industry coalition, is supporting most of the regulations proposed by the US EPA to prohibit venting and require recycling of substitute refrigerants such as HFCs.

However, the Alliance expressed concerns over whether the US EPA had fully considered, as Congress intended, several health and safety factors in making decisions about whether to apply the venting prohibition. These factors include

toxicity, flammability, exposure data and contribution to ground level smog. 'All refrigerant substitutes, including hydrocarbons and ammonia, should be regulated under Section 608 of the Clean

Air Act pursuant to their respective health and safety threats,' said Dave Stirpe, the Alliance's Executive Director.

Contact: Alliance for Responsible Atmospheric Policy, fax: +1 703 243 2874,
e-mail: Alliance98@aol.com

SOLVENTS

New method of treating wastewater could help eliminate ODS solvents

The US company PolyIonix Separation Technologies Inc., of Dayton, New Jersey, United States, has launched a new method for removing heavy metal ions in low concentrations from wastewater. The method joins a number already developed which can help eliminate the need for CFC-113 in defluxing electronic assemblies.

The technique depends on a simple principle: one or more special polymers are used to form a complex with the metal ions, which is then filtered out with an ultrafiltration membrane. The concentrate stream can then be treated to recover the polymer for re-use; the metal ion solution can either be recycled back to, say, plating baths or the metals recovered by other methods. Each metal requires a specific polymer tailored to it.

The technique, called Polymer Filtration, or PF for short, was originally developed for separating radioactive metals from wastewater. It has been used under industrial conditions for about two years. PF may be a cost-effective way for removing copper, nickel, lead and tin from the very dilute wash and rinse waters from aqueous defluxing, bringing metal concentrations down to less than regulatory levels, thereby providing another tool to help in the elimination of CFC-113 for defluxing electronics assemblies.

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need special attention, most of the countries will meet the 1999 freeze in CFC production and consumption. The Committee approved projects worth US\$ 35.4 million for the four implementing agencies.

One of the main issues discussed was the evaluation of the implementing agencies' 1997 Business Plans performance compared to their progress reports. Major decisions taken during the meeting included:

- the Secretariat should work with the implementing agencies to propose appropriate indicators for the evaluation of Business Plans for both investment and non-investment projects;
- a workshop should be held with the Secretariat and implementing agencies on progress reporting and preparation of Business Plans;
- a workshop to review the experience to date with Refrigerant Management Plans should be convened in association with the 10th Meeting of the Parties;

- the Secretariat should prepare operational guidelines for the project completion reports;
- bilateral agencies should present their Work Programmes to the ExCom at the beginning of each year, and bilateral projects worth more than US\$2 million should be fully reviewed by the ExCom;
- renewal of institutional-strengthening projects should be linked to progress in other approved phase-out projects in the country;
- the Hydrocarbon Safety Case Study was approved as a guide for the implementing agencies in the preparation of investment projects;
- an open-ended contact group was established to study concessional lending;
- US\$10 million was allocated to facilitate pilot conversions in SMEs following criteria set by the ExCom.

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Russian Federation to stop CFC production by end 2000

Ten donor countries—Austria, Denmark, Finland, Germany, Italy, Japan, Norway, Sweden, the United Kingdom and the United States—have committed US\$19 million to assist in the closure of the Russian Federation's production facilities for CFCs and halons by the year 2000. The funds, the result of a special initiative by the World Bank, will be used to compensate the producers of ODS and will supplement US\$10 million from the Global Environmental Facility (GEF).

The Russian Federation currently accounts for about 9 per cent of the world production of CFCs and consumes about 6.5 per cent. More importantly, its production capacity is almost half of the world capacity now. Russia was to have phased out its production and consumption of ODS by the end of 1996. However, its political and economic transition delayed the phase out and Russia sought the help of the international community.

The GEF (administered by UNEP, UNDP and the World Bank) has sanctioned US\$60 million to change the technologies of the consumer industry in Russia to ozone-friendly substitutes. The closure of the production sector was considered essential to stop the smuggling of CFCs to the industrialized countries.

The donor's round-table meeting on the *Special Initiative for Ozone Depleting Substances Production Closure in the Russian Federation* was held in Moscow, 6–7 October 1998. Russia also committed itself to phase out the production and consumption of carbon tetrachloride and methyl chloroform by 2000, and to observe the controls on HCFCs and methyl bromide.

Contact: World Bank, fax: +1 202 614 0480, e-mail: twaltz@worldbank.org

In brief...

○ The Indian refrigerator manufacturer Godrej-GE Appliances pledged to phase out the use of all CFCs by the year 2000—well before the Indian Government's deadline of 2006 for the elimination of ODS. The company is part of the US\$6 million Ecofrig project which benefits from inputs from the Indian, Swiss and German Governments and the World Bank, and will use hydrocarbon refrigerants to replace CFCs.

○ The German Federal Environmental Agency reports that the total amount of CFC-12 in air-conditioning and refrigeration equipment, which stood at about 6740 tonnes at the beginning of 1996, had been reduced by more than 50 per cent by mid-1998.

Contact: Federal Environmental Agency, fax: +49 30 8903 3105

○ The US EPA has published a final rule in the *Federal Register* (vol. 63, pp. 41625–51) that makes amendments to the Clean Air Act on the control of ODS. The changes are designed to improve the EPA's overview of imports of ODS for essential uses and imports of used ODS.

Contact: US EPA, fax: +1 202 565 2096

GEF grant to help Ukraine

The GEF Council has approved a US\$23.2 million grant to help Ukraine phase out ODS. The project is intended to assist businesses in the refrigeration, aerosol, solvent and halon sectors that consume high levels of ODS to make the transition to non-ODS substances before supplies diminish. The project will also provide technical assistance and institutional strengthening to an Ozone Office operated by the Ministry of Environmental Protection and Nuclear Safety, which will act as the implementing unit for the project.

Contact: GEF, fax +1 202 522 3362

Ozone science news

The ozone hole: record lows for the time of year

At the end of September, ozone depletion in the Antarctic was the greatest ever observed for the time of year, and covered a larger area than ever before.

The area with ozone values of less than 220 m atm-cm exceeded 25 million km², compared to an average of about 20 million km² over the past few years and larger than the previous record of 22 million km² in 1993. Average ozone levels over the entire polar area was about 160 m atm-cm (a 45–50 per cent deficiency) with minimum values less than 100 m atm-cm (a 70 per cent deficiency) estimated from satellites. Over the Antarctic stations of Marambio, Neumayer and Syowa, ozone levels were 25 per cent lower than in the same period last year. In the layer 14–22 km high, ozone loss was 80–95 percent.

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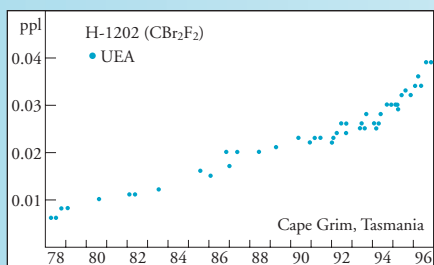
UV may affect plankton reproduction

A report in a recent issue of *New Scientist* has confirmed that plankton reproductive cells appear to be several times more sensitive to UV (ultraviolet) radiation than mature cells. The research was carried out by scientists at the University of Plymouth, United Kingdom, who measured the amount of photosynthetic activity in *Enteromorpha intestinalis* as UV-B levels increased.

They found that when the sexually-reproductive plankton cells were exposed for an hour to the equivalent of an ozone hole with 30 per cent depletion, the rate of photosynthesis fell by 65 percent. This reduced the cell growth rate by up to 17 per cent, and cut to about one-half their chances of successful germination. The leader of the research group has concluded that, since earlier studies have not included the reproductive phase, 'the ecological significance of elevated UVB exposure in the marine environment may be seriously underestimated'.

Contact: University of Plymouth, fax: +44 1752 232991, e-mail: science@plymouth.ac.uk

Atmospheric concentration of halon-1202 increasing



Scientists from Australia's CSIRO have discovered that the concentration of halon-1202 is growing rapidly in the atmosphere — by 17 per cent a year during the past two years, and fivefold since the late 1970s. Dr Paul Fraser from CSIRO Atmospheric Research claims that continued emissions of halons may delay the recovery of the ozone layer which is likely to be detected in the next

10–20 years. CSIRO's discovery comes from measurements of pristine air collected at the Bureau of Meteorology's Cape Grim baseline air pollution station in northwest Tasmania. Halon-1202 is not controlled under the Montreal Protocol.

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New light on skin damage

Scientists have discovered that sunlight triggers a harmful reaction when it strikes a molecule in the skin—ironically, a molecule once thought to be 'nature's sunscreen'. The work, which may shed light on how UV radiation causes skin cancer, was conducted at the University of California, United States, by Dr John D. Simon and his graduate student Kerry Hanson (*Proceedings of the National Academy of Sciences*, 95, 18, 10576–78).

The focus of the study was the sun-sensitive molecule called trans-urocanic acid (t-UA). Formed in the top layer of the skin, t-UA molecules were once hailed as a natural sunscreen because they absorb the harmful wavelengths of ultraviolet radiation known as UV-B.

Drs Hanson and Simon studied the effect of UV wavelengths previously regarded as harmless—UV-A. They discovered that the t-UA was transformed into an excited triplet state that leads to the creation of oxygen radicals—molecules that are blamed not only for the premature aging of skin but also for damaging DNA and suppressing the immune system.

The sun protection factor in sunscreens refers to their ability to protect against UV-B. There are no worldwide standards to measure protection against UV-A, which accounts for 95 percent of the sunlight that reaches the Earth. The work suggests that those exposed to sunlight should find ways of protecting themselves from UV-A as well as UV-B.

Contact: Simon, tel: +1 919 660 1565, e-mail: jds@chem.duke.edu; Hanson, tel: +1 217 333 3054, e-mail: khanson@physics.uiuc.edu, <http://www.nih.gov/nigms/news/releases/simon.html>

Phase-out successes

Algerian factory phases out ODS in aerosols

Entreprise Nationale des Détergents et Produits d'Entretien (ENAD) in Algeria has phased out 150 ODS tonnes in its aerosol production facility. With funding assistance from the Multilateral Fund, the project (ALG/ARS/18/INV/12) is being implemented by UNIDO at a cost of US\$614 850. The company is using hydrocarbons (LPG) as an alternative to CFCs. ENAD produces 5 million aerosol cans a year.

Refrigeration company in Syria phases out CFCs

With assistance from the Multilateral Fund, and through a project implemented by UNIDO (SYR/REF/15/INV/05), Penguin Syrian Batric Co. has phased out 82.3 ODS tonnes in the manufacture of refrigerators and freezers. The company is using cyclopentane as the foam blowing agent and HFC-134a as the refrigerant. The cost of the project is US\$1.719 million. Penguin produces 60,000 units a year.

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UNDP assists Filipino factory to convert

In the Philippines, Matsushita Electric Philippines Corporation (MEPCO) completed a project (PHI/REF/18/INV/12) eliminating the use of CFC-11 and -12 in the manufacture of domestic refrigerators in 1996. The substitutes used were HCFC-141b for foam, since the mother company in Japan is using same technology, and HFC-134a for the refrigerant. The amount approved under the Multilateral Fund was US\$112 244 which phased out 47 ODP tonnes. UNDP is the implementing agency and the executing agent is UNOPS.

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ODS-free refrigerators from MEPCO on sale in a shop in Metro Manila, the Philippines.



WORLD Ozone Day CELEBRATIONS

Dr Klaus Töpfer, UNEP's Executive Director, introduced this year's Ozone Day on 16 September by claiming that the Protocol is a shining example of how a legal convention can help solve an environmental problem. 'In 1986 the consumption of CFCs in the industrialized countries was about 1 million tonnes,' he said. 'Today, thanks to the Protocol, CFC consumption in these countries has been completely phased out apart from about 15 000 tonnes for permitted essential uses only.'

The theme for this year's Ozone Day was *For Life on Earth: buy ozone-friendly*, a message directed to governments, businesses and consumers alike. 'Ozone Day', said Töpfer, 'is a time to reflect on both the achievements and the problems that lie ahead. The next 12 months will be a critical period in our efforts to save the ozone layer.'

Message from the UN Secretary-General

'Every citizen can help by buying ozone-friendly products. Such choices can not only prod industries to switch to ozone-friendly technologies but can also help reduce illegal trade and ensure that countries fulfil their obligations under the Protocol.'

Kofi Annan
UN Secretary-General

What UNEP did

UNEP marked International Ozone Day with a number of events:

- a celebration at UNEP Headquarters in Nairobi, Kenya, for Permanent Representatives to UNEP, representatives of other UN organizations, NGOs and UNEP staff;
- a shopping trip to a Nairobi electronics shop for ozone-friendly goods by UNEP's Executive Director;
- press releases on the International Ozone Day and on illegal trade in CFCs;
- a slide show on ozone issues that can be downloaded from the Internet at: <http://www.unepie.org/ozat/pub/general/preskit/index.htm>;
- publication of a list of ozone-friendly products, also downloadable from the Internet: http://www.unep.org/unep/secretar/ozone/ozone_safe.htm
- a video news release issued by TVE International in collaboration with UNEP, highlighting international concern that the

current illegal trade in CFCs will reduce the speed of transition to ozone-safe alternatives

Contact: TVE, fax: +44 171 586 4866,
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Ozone Day around the world China

The Chinese celebration of Ozone Day was marked with a symposium held on Ozone Day (16 September). During this occasion, an exhibition of the entries to the National Children's Painting Competition was held, and awards were presented to the winners.

Schoolchildren were invited to this celebration.



International Ozone Day, Beijing

Fiji

Media releases were sent to newspapers and radio stations; the 'Environment Fun Page' was published in *The Daily Post*; a short video on ozone was shown for one week on Fiji One TV channel; videos were sent to 20 schools; a promotion display was held at the Department of environment; and videos were shown at the Fiji Institute of Technology.

Guyana

The Special Advisor to the President on Environment made a special Message to the Nation on 16 September; newspaper features were also published and radio programmes were broadcast. The main highlight was the 'Train-the Trainers' workshop held in Guyana on this occasion—Ministers from 3 ministries attended.

Iran

Broadcasts were made by the Ozone Office Manager on national broadcasting services; a conference was organized by the Ozone Office; and a colour poster disseminated to relevant agencies.

Jamaica

International Ozone Day was featured in the *Daily Gleaner* newspaper, which included an



India's celebrations of Ozone Day included a children's painting exhibition and production of a car sticker.

overview of the Jamaican Country Programme; exhibitions were held in libraries island-wide, notably at the Kingston and St Andrew's Parish Library where there was a display of paintings from the International Painting competition; interviews were conducted on local radio and television; and a booklet entitled *What can you do to save the ozone layer?* was distributed.

Venezuela

FONDOIN organized a Commemorative Ceremony to celebrate Ozone Day with a panel discussion on 16 September. They also published a special issue of the newsletter *NOTIOZONO* and distributed it to the attendees of the conference. The winners of the National Children's Painting Competition were also honoured.

West Asia

Booklets on saving the ozone layer were distributed to all National Ozone Units in the Region; the National Ozone Painting Competition was launched; a symposium was held on 16 September; and films of 'Saving the Ozone Layer' were shown. In Bahrain an essay competition was held for school children and articles were published in national newspapers. In Kuwait, week-long celebrations were held aimed at increasing public awareness of ozone issues. In the United Arab Emirates 2000 copies of *The Ozone Layer: what we know about it and how to protect it* were published in Arabic.

10th Meeting of the Parties



9–13 November	26th Meeting of the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol
13–15 November	Solvents TOC meeting
15 November	Preparatory Meeting of the Ozone Coordinators and Experts of Arab Region
16–17 November	Solvents Seminar
17 November	21st Implementation Committee under the Non-Compliance Procedure of the Montreal Protocol
17 November	Meeting of the Ad-Hoc Working Group
17 November	Second Meeting of the Bureau of the 9th MOP to the Montreal Protocol
17 November	Synthesis Meeting of UNEP Assessment Panels
18–20 November	18th OEWG Meeting
19 November	Results of the National Science Foundation Study of the History of Ozone Layer Protection
19–20 November	NGO Forum, Arab Office for the Youth and Environment
20–23 November	Ozone Layer Protection Exhibition
23–24 November	10th Meeting of the Parties to the Montreal Protocol

The 10th Meeting of the Parties to the Montreal Protocol will be held in Cairo, Egypt, 23–24 November 1998. It will be preceded by a series of related meetings (see box).

A number of major issues are to be discussed at the meeting. These include:

- election of members of the Implementation Committee and of the ExCom, and of the co-chairs of the Open-ended Working Group;
- the development of national halon management strategies, including options for storage and disposal;
- consideration of new substances with ozone-depleting potential;
- possible limitations on quarantine and pre-shipment exemptions for methyl bromide use, and consideration of alternative definitions related to quarantine and pre-shipment exemptions;
- consideration of terms of reference for a study on the 2000–2002 replenishment of the Multilateral Fund;
- consideration of the need to export Annex A and Annex B substances from non-Article 5 countries to meet the basic domestic needs of Article 5 countries;
- assessment of the implications of the Kyoto Protocol, particularly in relation to hydrofluorocarbons (HFCs), for the implementation of the Montreal Protocol;
- consideration of the future frequency and duration of Meetings of the Parties.

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<http://www.unep.org/unep/secretar/ozone/home.htm>

.....NEWSFLASH.....

WINNERS OF THE CHILDREN'S PAINTING COMPETITION ANNOUNCED

The Selection Committee of the Children's Painting Competition organized jointly by the UNEP IE OzonAction Programme and the Egyptian Environmental Affairs Agency (EEAA) announced the winners of the contest on 20 October 1998 in Paris. The four top prizes were awarded to the entries from Indonesia (Laila Nuri), Iran (Rosa Kallontarpour), Niger (Bachari Saidou) and Egypt (Najla Husein Eid). These winners will be hosted by the Government of Egypt for a 5-day stay during the Meeting of the Parties where the Awarding ceremonies will take place.

The Committee also awarded two Jury prizes to the entries from China (Nan Qu) and Romania (Maria Rozica Popescu). Ten entries were given Special Merit awards.

UNEP received entries from 53 countries, each of them winners of their own national competitions.

All the winners will receive plaques of appreciation and gifts from UNEP and the EEAA.

The Selection Committee was composed of Mme Fatma Al-Madoul (President of the National Centre for Children's Culture, Egypt), Mr Michel Baudson (Responsible for Cultural Affairs, Galerie Nationale de Jeu de Paume, Paris), Mr Paul de Gobert (artist/painter, Paris), Mme Laurence Musset (Ministry of the Environment, France) and Mr Naresh Singh (photographer, Paris).



Poster for the Philippines Painting Competition

Worldwide action

Training-the-trainers in the Caribbean

The first train-the-trainers workshops on Good Practices in Refrigeration were held in St Lucia, 7–11 September 1998, organized by Environment Canada, and in



Hands-on experience in Good Practices in Refrigeration in Guyana

Guyana, 14–18 September 1998, organized by UNEP IE. Similar workshops are scheduled for November 1998 in the Bahamas and in Trinidad & Tobago.

Participants from industry, government, training institutes and the military learned about the importance of ozone layer protection, how to service refrigeration and air-conditioning equipment in order to avoid refrigerant emissions, and which alternative refrigerants could be used for retrofitting. In the hands-on sessions, they practised the recovery and recycling of refrigerants from refrigerators and from stationary and mobile air-conditioning systems.

The participants expressed two concerns: how to find low cost CFCs and how to deal with contaminated refrigerants and refrigerant blends. They proposed that UNEP develop guidelines on the disposal of ozone-depleting refrigerants.

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China holds workshop to update its Country Programme

The China State Environmental Protection Agency (SEPA), in cooperation with related Ministries and Beijing University, organized a meeting 16–19 September 1998 in Beijing, China, to review China's Country Programme, particularly the lessons learned in updating the CP and preparing a new action plan. Representatives from UNEP, UNIDO, UNDP, the World Bank, the Multilateral Fund and invited technical experts participated. Resource persons from United States, India, Japan, Sweden, the European Community, Canada and UNEP ELI/PAC gave presentations. The main results included recommendations for

special actions for the various sectors that still need attention. The CP will be updated by China in coordination with UNDP.

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e-mail: nepafeco@public.bta.net.cn

Philippines holds forum on non-ODS substances

In the Philippines, the Department of Environment and Natural Resources coordinated an industry-led Forum on Non-ODS Using Technologies and Recognition Day for Ozone Friendly Products, held in Manila, the Philippines, 23–24 July 1998. Presentations were given by representatives from the implementing agencies.

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Network news

English- and French-speaking Africa

ODS Officers from 39 countries in French and English-speaking Africa met in their 2nd joint workshop in Ouagadougou, Burkina Faso, 29 September–1 October 1998. Representatives from UNEP IE, UNEP Regional Office for Africa, UNDP, UNIDO, Ozone Secretariat, Germany and France also participated. The workshop:

- proposed a high-level meeting of customs officers back-to-back with an African Ministerial Conference on Environment (AMCEN);
- committed countries to design and implement national licensing systems;

Status of Ratification

(as at 30 September 1998)

The Vienna Convention

168 Parties; 3 new Parties: Kazakhstan, Lao Peoples' Democratic Republic, Tonga

The Montreal Protocol

167 Parties; 3 new Parties: Kazakhstan, Lao Peoples' Democratic Republic, Tonga

The London Amendment

123 Parties; one new Party: Togo

The Copenhagen Amendment

80 Parties; no new Parties

The Montreal Amendment

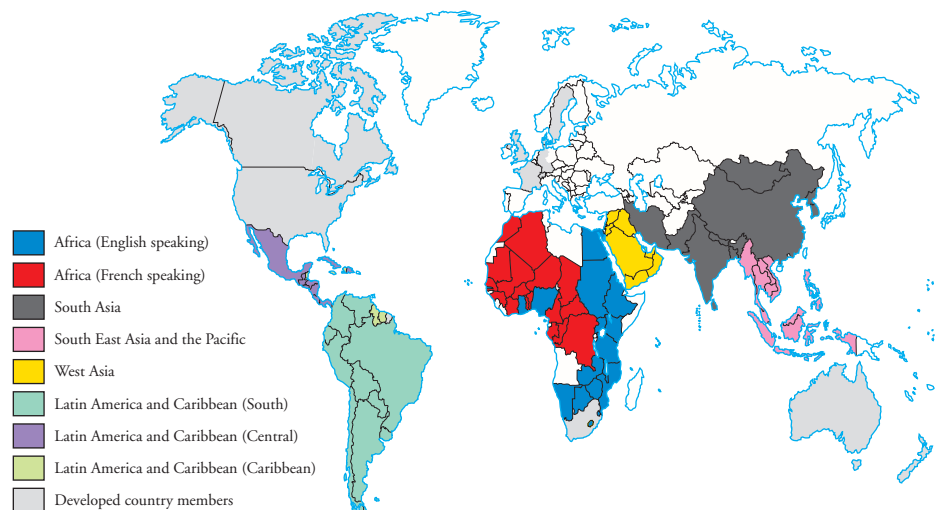
3 Parties; new Party: Republic of Korea

- urged the immediate implementation of activities in the Refrigerant Management Plan that are concerned with national legislation and regulations;
- recommended that assistance be given to Parties wanting to develop national CFC-free MDI transition strategies; and
- made recommendations on the ExCom document on commercial refrigeration which will be presented at the 26th ExCom.

Moving on ...

Mr Steve Gorman has left his position as Network Manager for UNEP IE to take up a new challenge as Team Leader with the World Bank's Montreal Protocol Unit. We would like to thank Steve for his leadership of the regional networks and his support and commitment to OzonAction over the years, and we wish him every success in his new position.

The map below shows the eight networks of ODS Officers currently in operation:



The National Ozone Unit Interview

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

Mr Liu Yi



Director of Project Management Office for Ozone Layer Protection, State Environmental Protection Administration, China

● *What are the major achievements of your NOU in the past three years?*

In the past three years, China has succeeded in controlling the CFC consumption and production growth rate, banned the establishment of new CFC- and halon-related production facilities, phased out CFC use in aerosols (except for essential uses), and developed general and sector-specific phase-out plans. We are now confident that China can meet the 1999 CFC consumption freeze target.

● *What have been the major difficulties in meeting your goals?*

As a producer and consumer of CFCs, China insists that CFC production and consumption be reduced simultaneously, and that alternatives be put in place to ensure that CFC consumption continues to be reduced. China has had problems in controlling CFC imports and exports, and this could have affected China's ability to meet the 1999 freeze target. To remedy this problem, China—with assistance from the World Bank and the Multilateral Fund—has developed a sectoral phase-out plan in which 5000 ODP tonnes of CFC production is scheduled to be phased out before the end of 1999 to ensure that China can fulfil its obligations under the Montreal Protocol. Timely development of

policies and their enforcement to support implementation of investment projects were the key difficulties found by China.

● *What other problems have you had?*

Much of China's CFC consumption is in the country's many small and medium-sized enterprises (SMEs). Phasing out CFC use in this area will be hard. SMEs in China, like those in other countries, lack financial and technical resources, and information of available alternatives. To tackle this issue, we need the resources to fund an umbrella project or a sectoral phase-out plan rather than trying to make progress with a project-by-project approach. We are pleased to say that China, with assistance from the implementing agencies and the Fund Secretariat, is now well on the way to solving this problem.

● *What lessons have you learned that could be helpful for other developing countries?*

Our experience in implementing the Montreal Protocol has thrown up a number of key issues. First, it is very important to ensure close coordination between the relevant government offices and departments in the setting up of national policy and regulations. Secondly, technical and policy information must be disseminated in good time to the public, to stakeholders at all levels, including small producers and users, as well as consumers. Training of government officers, local EPAs and customs officers in monitoring ODS is essential. We are also exploring new means of speeding up the execution of approved projects under the Multilateral Fund.

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World policy round-up

Canada proposes new regulations

Canada had published new regulations in the *Canada Gazette* that combine previously separate regulations on ODS and products containing ODS. They include bans on the manufacture and sale HCFCs and products containing HCFCs where alternatives are available; on the manufacture and import of containers of HCFCs of 2 kg or less from 1 January 1999 and on the sale of such containers from 1 January 2000, except for critical applications; and on the import and manufacture of plastic foam products containing HCFCs.

The regulations also establish a permit system for exporting products containing CFCs, halons, methyl chloroform and carbon tetrachloride to developing countries, prohibit the manufacture or import of products containing specific ODS, and prohibit the import of recycled and recovered CFCs. These regulations will be in place early in 1999.

Contact: Environment Canada, fax: +1 819 997 7935, e-mail: josee.portugais@ec.gc.ca

Forthcoming meetings

GEF Council, Washington DC, United States, 4–6 November 1998

Implementation of the Refrigerant Management Plan: Training the Trainers in Refrigeration, St Lucia, 7–11 November 1998

Implementation of the Refrigerant Management Plan: Training the Trainers in the Refrigeration Sector, Trinidad and Tobago, 16–20 November 1998

17–24 November: various meetings—see page 8.

Implementation of the Refrigerant Management Plan: Training the Trainers in Refrigeration, Bahamas, 23–27 November 1998

Fifth Annual International Research Conference on 'Methyl Bromide Alternatives and Emissions Reductions', Orlando, Florida, United States, 7–9 December, 1998

6th International Energy Agency Heat Pump Conference, 'Heat Pump—A Benefit for the Environment', Frankfurt, Germany, 31 May–2 June 1999

For additional information, see
<http://www.unepie.org/ozonaction.html>
<http://www.teap.org>

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