



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.

Contact: Dr Omar El Arini, Secretariat of the Multilateral Fund, 1800 McGill College Avenue, 27th Floor, Montréal, Québec H3A 3J6, Canada, tel: +1 514 282 1122, fax: +1 514 282 0068, e-mail: secretariat@unmfs.org



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.

Contact: Mrs Jacqueline Aloisi de Lardere, UNEP IE, 39–43 quai André Citroën, 75739 Paris Cedex 15, France, tel: +33 1 44 37 14 50, fax: +33 1 44 37 14 74, e-mail: ozonaction@unep.fr, <http://www.unepie.org/ozonaction.html>



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.

Contact: Mr K. M. Sarma, UNEP Ozone Secretariat, PO Box 30552, Nairobi, Kenya, tel: +254 2 623 885, fax: +254 2 623 913, e-mail: madhava.sarma@unep.org, <http://www.unep.org/unep/secretar/ozone/home.htm>



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.

Contact: Mr Frank Pinto, UNDP, 1 United Nations Plaza, New York, NY 10017, United States, tel: +1 212 906 5042, fax: +1 212 906 6947, e-mail: frank.pinto@undp.org



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).

Contact: Mr Angelo D'Ambrosio, UNIDO, PO Box 300, A-1400 Vienna, Austria, tel: +43 1 21131 5085, fax: +43 1 21131 6853, e-mail: adambrosio@unido.org



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.

Contact: PEN, fax: +81 7 3357 9034,
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.

Contact: UNEP IE OzonAction Programme,
fax: +33 1 44 37 14 74,
e-mail: ozonaction@unep.fr,
<http://www.unepie.org/home.html>

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.

Contact: Rappa, fax: +1 219 326 6047,
e-mail: rappainc@aol.com

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.

Contact: PolyIonix Separation Technologies Inc: Karl M. Kraus, fax: +1 732 274 3072,
e-mail: KrausK@pginw.com

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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.

Contact: Dr Omar El Arini, Secretariat of the Multilateral Fund, 1800 McGill College Avenue, 27th Floor, Montréal, Québec H3A 3J6, Canada, tel: +1 514 282 1122, fax: +1 514 282 0068, e-mail: secretariat@unmfs.org

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.

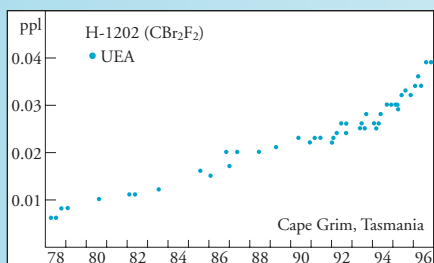
Contact: Dr Rumen Bojkov, tel: +4122 730 8455, e-mail: bojkov@wmo.ch

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.

Contact: CSIRO, fax: +61 3 9239 4444, e-mail: paul.holper@dar.csiro.au, <http://www.dar.csiro.au>

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.

Contact: UNIDO, tel: +43 1 21131 5085,
fax: +43 1 21131 6853,
e-mail: ssi-ahmed@unido.org

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.

Contact: UNDP, tel: +1 212 906 5042,
fax: +1 212 906 6947,
e-mail: frank.pinto@undp.org

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

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

Contact: TVE, fax: +44 171 586 4866,
e-mail: tve-dist@tve.org.uk

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.

Germany



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

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_12631

