



# 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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## Viewpoint

### *New strategy, new challenges—compliance with the Montreal Protocol*



*Engr. D.B. Usman,  
Nigeria*

In March 2001, the 33rd Executive Committee adopted a new strategic planning framework aimed at enhancing the effectiveness of the Multilateral Fund so that developing (Article 5) countries can meet their phase-out obligations by

2010. This new framework poses many challenges to both developing and developed countries, as well as other stakeholders, and will require greater dedication, commitment and cooperation on the part of all.

In adopting the country-driven approach, the new framework emphasizes greater government responsibility for managing national phase-out programmes, and puts the NOUs in the driver's seat. Developing countries are urged to use the sector/national phase-out approach, and funding will now be 'performance-based', meaning countries will continue to be funded only if they can demonstrate 'sustainable, aggregate reduction of ODS'. This new thrust implies new commitments

and responsibilities for developing countries, which must now find new ways of effectively meeting their compliance requirements.

To face the demanding task ahead, our governments must give more support to the NOUs and better integrate them into mainstream government institutions. For their part, the NOUs need to redouble their efforts—for they cannot afford to fail.

Over the past decade, developed countries have made substantial and impressive financial contributions to support ODS phase out in developing countries, which has undoubtedly contributed to the success of the Montreal Protocol. However, like good runners, we cannot afford to slow down and admire our achievement until we get to the finish line. As noted by the President of the Bureau of the 12th Meeting of the Parties, past investments made by developed countries can only be regarded as the 'foundation of a larger structure'. The Multilateral Fund's new approach underscores the fact that the time to build the larger structure has come, and we must face the challenges that come with it. With funding more closely linked to compliance in Article 5 countries,

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additional funds will be needed to enable these nations to meet their new responsibilities. Only through developing and developed countries working closely together will adequate financial and technical assistance be assured.

*Mr Usman is Permanent Secretary, Federal Ministry of the Environment, Nigeria and Chairman of the Executive Committee of the Multilateral Fund for 2002.*

## ExCom responds to the evolving needs of countries

### **The Compliance Assistance Programme: UNEP's new approach to helping Article 5 countries**

In response to the changing needs and priorities of Article 5 countries during the compliance period, UNEP has significantly reoriented its programme strategy and delivery mechanisms by transforming its overall work strategy into the Compliance Assistance Programme (CAP).

In line with the Executive Committee's strategic planning, UNEP began to reassess the services needed by Article 5 countries during the compliance regime. As a result, UNEP has reoriented its

OzonAction Programme. Noting that this will help promote greater compliance and commitment, the ExCom approved the CAP in December 2001.

The CAP leaves 'business as usual' behind in two significant ways. First, UNEP is moving from a project management approach to direct implementation, using a team of professionals with appropriate skills and expertise who can directly assist countries to support and sustain compliance. Second, UNEP is regionalizing delivery of projects and services by placing its regional offices at the forefront of project implementation. The majority of the CAP

team will be based in UNEP's regional offices where they can work more closely with the countries on an ongoing basis. UNEP believes that this innovative approach may set a trend in supporting compliance with multilateral environmental agreements.

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### **World Bank's projects for complete phase out of CFCs**

In a significant move towards ending developing countries' use of ODS, US\$35.8 million was approved by the

*continued on page 6 ...*

## News from international agencies



### Fund Secretariat

US\$58.7 million was approved at the 35th ExCom for projects that will phase out more than 8,300 ODP tonnes from the consumption sector and 2,170 ODP tonnes from the production sector. The ExCom also adopted revised guidelines for preparation of country programme updates and two options for determining the amount of maximum residual CFC consumption eligible for funding in Article 5 countries.

In January, the Chief Officer addressed the executive board of UNDP in New York regarding the ExCom's recent decision on strategic planning and its implications for UNDP. The Secretariat also participated in several meetings, including an international workshop on methyl bromide in Beijing and a meeting on policy interface between Multilateral Environment Agreements (MEA) and the World Trade Organization in Geneva.

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### UNEP DTIE

Moving towards a country-driven approach for the Montreal Protocol, the 35th ExCom approved a new mode of implementation for UNEP's 2002 Work Programme, called the Compliance Assistance Programme (see page 1).

UNEP's Work Programme Amendment for 2001 was also approved at US\$2 million, and includes institutional strengthening renewals, RMP implementation and two projects in China supporting methyl bromide phase out.

Train-the-trainers workshops were held for refrigeration technicians in Burundi and for customs officers in Burundi, Chad, Guatemala, Niger and Uruguay. A workshop to develop a Regional Halon Management Plan for the Caribbean was held in Guyana.

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### UNEP Ozone Secretariat

The Secretariat distributed reports on the 13th Meeting of the Parties (MOP), held in October in Colombo, Sri Lanka.

In coordination with the World Meteorological Organization (WMO), preparations were made for the Fifth Meeting of the Ozone Research Managers of the Parties to the Vienna Convention, held in Geneva on 25-27 March 2002.

A TEAP Replenishment Task Force questionnaire was sent to all Parties to collect information for a study on the 2003-2005 replenishment of the Multilateral Fund. The study will provide a basis for upcoming replenishment negotiations.

The Secretariat announced that the Beijing Amendment entered into force on 25 February 2002 (see box, page 6).

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### UNDP

More than 1,400 ODP tonnes will be eliminated in 17 countries thanks to 41 investment projects approved at the 35th ExCom. US\$12.6 million will cover projects in the aerosol, foam, methyl bromide (MB), sterilant and refrigeration sectors, as well as additional institutional strengthening for NOUs. Six terminal sector phase-out plans were approved for Mexico (foam), Chile (sterilants), Bolivia (foam and methyl bromide), Peru (foam) and Costa Rica (MB).

The Costa Rica project will eliminate 426.9 ODP tonnes, excluding quarantine and pre-shipment, over a six-year period. Multi-year funding of US\$4.8 million will allow the country to procure materials and equipment needed for the final conversion to MB-free alternatives and technologies. In addition, training and technical support programmes will be implemented across more than 20 sub-regions.

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### UNIDO

33 investment projects in the foam, refrigeration and process agent sectors of 12 countries were approved at the 35th ExCom for UNIDO implementation. A Halon Bank Management Programme was also approved for Yugoslavia, as well as two methyl bromide phase-out projects for Croatia and Turkey. Together, these projects will phase out 1,358 ODP tonnes. Phase III of the institutional strengthening project for FYR Macedonia was also approved.

UNIDO completed a methyl bromide project for tobacco production in Brazil using floating seed tray technology, which involved 144,000 farmers and phased out 84.4 ODP tonnes. Senegal also completed its methyl bromide phase-out project for seed fumigation, phasing out 0.7 tonnes. The end of the year saw the completion of two umbrella projects in the refrigeration sector in Venezuela, phasing out a total of 57.9 ODP tonnes.

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### World Bank

The 35th ExCom approved US\$35.8 million to completely phase out the consumption of 7,468 ODP tonnes through World Bank-implemented projects in the Bahamas, Malaysia, Thailand and Turkey. These projects include a Total Phase-out Management Plan for the Bahamas, National CFC Phase-out Plans for Malaysia and Thailand and sector phase-out plans in refrigeration for Turkey (see page 1). An additional US\$53.9 million was awarded to China for the phase out of 10,651 ODP tonnes in the polyurethane foam sector by 2009. The total approved amount for the World Bank for 2002 annual plans, including the annual program for the halon sector in China, is US\$93.4 million.

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# TECH-TALK

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

## METHYL BROMIDE

### Metam-sodium research— progress report



*Metam-sodium being applied on a strawberry field in California*

Seeking to 'further investigate metam-sodium as a long-term, viable methyl bromide alternative', the Metam-Sodium Task Force (MSTF) is conducting efficacy trials in the USA. A recent progress report on MSTF, the Interregional Research Project Number Four (IR-4), said that trials are currently being conducted in Florida, California, the Southwest and the Pacific Northwest on minor crops such as strawberries, tomatoes, floral crops and nursery stock. The trials are intended to evaluate the efficacy of metam-sodium applications and sealing practices. The evaluations will assess the benefits of alternative equipment designed to enhance the placement and distribution of metam-sodium within the treatment zone. The group will also assess metam-sodium sealing methods intended to enhance the dose within the treatment zone.

**Contact:** IR-4, tel: +1 732 932 9575,  
[www.cook.rutgers.edu/~ir4](http://www.cook.rutgers.edu/~ir4)

## FOAMS

### US EPA awards grant for ozone-friendly foams

The United States Environmental Protection Agency (US EPA) recently awarded a US\$135,000 grant to the Spray Polyurethane Foam Alliance (SPFA) to examine new ozone-friendly blowing agents. These agents are used to produce

different densities and bubble sizes of insulation foam for use in homes and commercial buildings.

At present, spray polyurethane foam is made with HCFC-141b, an ODS which is being phased out of production in the USA. The US EPA said the grant will assist the spray polyurethane foam industry to safely convert to alternative technologies that are economically viable and energy-efficient.

In addition, the grant will allow SPFA to collect technical information on field applications. The information will allow chemical companies and spray foam applicators to more effectively develop new formulations that do not damage the ozone layer.

**Contact:** Dave Ryan, US EPA,  
e-mail: [ryan.dave@epa.gov](mailto:ryan.dave@epa.gov)

## REFRIGERANTS

### New refrigerator keeps cool with hydrocarbons

Matsushita Electric Industrial Company, Ltd. recently unveiled a new refrigerator

that uses a hydrocarbon (HC) refrigerant in place of CFC, HFC and HCFC refrigerants, which are damaging to the atmosphere. The new refrigerator was introduced to the Japanese market in February 2002.

The development of a new HC refrigerant—R-600A—led to the development of the HC cooling system. The new refrigerator uses less refrigerant than conventional ones, and includes a compressor that can handle the HC refrigerants. The product also features a double-cylinder glass radiant defrosting heater for HC refrigerants.

**Contact:** Matsushita Electric, [www.matsushita.co.jp](http://www.matsushita.co.jp)

### Two Japanese companies team up to produce CFC alternatives

Showa Denko and Asahi Glass recently announced plans to collaborate on an effort to produce CFC alternatives early next year.

Asahi has asked Showa to begin producing HFC-125, a key ingredient in a non-ozone-depleting air conditioning refrigerant designed to replace HCFC-22,

## *Blowing in the wind—AHAM group studies ODS release rate in refrigerator foam*



*Experiments show that shredding releases less than 40 per cent of blowing agent*

The percentage of blowing agent released from refrigerator polyurethane foam after the product is decommissioned is highly dependent on the size of shredded particles, according to new research conducted by scientists at Denmark Technical University (DTU).

The research, sponsored by the Association of Home Appliance Manufacturers (AHAM) in conjunction with

the United States Environmental Protection Agency focused on foam samples comprised of such blowing agents as CFC-11, HCFC-141b, HFC-134a and HFC-245fa. The scientists studied a shredder in Denmark and found that less than 40 per cent of the blowing agent is released upon shredding and during the first six weeks after an appliance has been shredded.

AHAM said this is an important finding because previous global warming computer models had assumed that 100 per cent of the blowing agent is released into the atmosphere when the appliance is shredded. The scientists hope to conduct further research to determine what happens to the blowing agent when the foam is buried in a landfill.

**Contact:** Jill Notini, AHAM,  
e-mail: [jnotini@aham.org](mailto:jnotini@aham.org), [www.aham.org](http://www.aham.org)

which is being phased out under the Montreal Protocol. Showa officials said the company will spend about US\$16 million to modify an existing facility to produce a maximum of 3,000 tons of HFC-125 annually.

The companies have been working together in the area of CFC alternatives since 1999, when Asahi chose Showa to produce HFC-134a for automotive A/Cs and domestic refrigerators.

**Contact:** Showa Denko, [www.sdk.co.jp](http://www.sdk.co.jp)

### New ammonia-based A/C system leaves CFCs out in the cold

Japan-based Mayekawa Manufacturing Company recently announced it has developed an air conditioner that uses a non-CFC, ammonia-based refrigerant. The unit features a 10-horsepower cooling capacity and will be the first piece of equipment in its class not to use a CFC-based coolant.

Mayekawa said it plans to begin production and marketing of the new refrigerant technology later this year. The company said that its new product will most likely cost about twice that of other non-CFC air conditioners, but noted that the device's high cooling efficiency is expected to attract many customers.

**Contact:** Mayekawa Manufacturing Company, [www.mycomj.co.jp/eindex/eindex.html](http://www.mycomj.co.jp/eindex/eindex.html)

## HALONS

### Misting systems gaining ground as halons phase out

With ozone-depleting halons set to be phased out over the next few years, water misting systems are gaining new popularity in various fire control applications.

Water misting systems emit water as tiny droplets that form a mist. The water puts out the fire by cooling it and by producing a 'diluting effect' caused by steam. The steam pushes air away from the fire as it forms, which reduces the concentration of oxygen feeding the fire. Researchers have determined that the maximum temperature of a fire was reduced from 600 to 1,000 °C to between 350 and 500 °C using a water misting system.

Another benefit of misting systems is that they can clean the air of smoke as the fire is extinguished. Smoke particles cling to the surface of the water droplets, breaking up clouds of dangerous gases.

However, water misting systems cannot always be used in the same applications as halon-based fire control systems. For example, the systems will not work in areas where temperatures are below freezing.

**Contact:** IFEX Technologies, [www.ifex3000.de](http://www.ifex3000.de) or FOGTEC, [www.fogtec.com](http://www.fogtec.com)

### Extinguishing halon 1211—New Zealand subsidizes early retirement for fire fighting equipment

Government funding has given a boost to New Zealand's halon recovery strategy. Stocks of halon 1301 have been identified and are progressively being cleaned for banking or 'essential' uses. However, an estimated 60,000 kg of halon 1211 also remains in New Zealand in fixed systems and hand held fire extinguishers. To encourage proper disposal, the government is offering to pay 25 per cent of the cost of collection and safe destruction of halon 1211. The subsidy will be available for three years, and businesses are being urged to use it while it lasts. Halon recovery is being managed by Halon Recycling Ltd, a non-profit company set up by the fire protection industry.

**Contact:** Halon Recycling Ltd, e-mail: [fpanz@clear.net.nz](mailto:fpanz@clear.net.nz) or Ministry for the Environment, e-mail: [alison.handley@mfe.govt.nz](mailto:alison.handley@mfe.govt.nz)

## AEROSOLS

### New non-CFC propellant receives US FDA approval

DuPont recently announced that it has received validation from the United States Food and Drug Administration for its non-CFC propellant Dymel HFA-227ea/P. The company noted that master files for the production and control of the chemical have been submitted for commercial use permit consideration.

Commercial production for the propellant, which contains HFC-227ea, began in December 2000. DuPont said it developed the chemical in an effort to help meet growing worldwide demand for CFC alternative pharmaceutical propellants.

**Contact:** DuPont, [www.dupont.com](http://www.dupont.com)

*TechTalk was compiled by Suresh Raj*

### STATUS OF THE MULTILATERAL FUND FOR OZONE LAYER PROTECTION\*

<b>Funds allocated:</b>	<b>US\$1.33 billion</b>
<b>Total expected phase out from funds allocated:</b>	<b>133,079 ODP tonnes</b>
<b>Phase out achieved to date:</b>	<b>76,120 ODP tonnes</b>

\*as of the 35th ExCom Meeting

## Foam removal poses challenge to refrigerator recycling in the UK

Each year, about 3 million refrigerators are discarded in England, and waste companies and recyclers have been able to easily reclaim CFC refrigerants. However, new Montreal Protocol regulations requiring the removal of CFC-laden foam insulation are creating unexpected complications.

Removing CFCs from foam insulation is an expensive process that requires machinery—known as a 'muncher'—that has not yet been installed in England or many other European nations. The first UK 'munching' plants are not expected to be ready until August at the earliest, and until 2004, citizens will bear the cost of storing and destroying the refrigerators. After that time, refrigerator manufacturers will be expected to assume some of the cost, which could come to as much as £60 million (about US\$85.7 million) per year.

In an attempt to avoid these costs, some owners have resorted to 'tipping'—the furtive dumping of old refrigerators in non-regulated sites. To curb tipping and ease the financial



*CFC-laden foam must be removed from millions of discarded refrigerators in the UK*

burden of foam-removal, the Department of Environment, Food and Rural Affairs (DEFRA) recently introduced a package of measures that will provide £6 million (US\$8.5 million) to local governments to cover the cost of storing discarded refrigerators until the end of the fiscal year. In addition, DEFRA will offer information on storing discarded refrigeration equipment, as well as on standards for removing CFCs from cooling systems and insulation foam.

**Contact:** DEFRA, tel: +44 8-459-335-577, [www.defra.gov.uk](http://www.defra.gov.uk)

## DIALOGUE AND DISCUSSION

### Meetings/Conferences/Workshops

#### Customs officer training in El Salvador—A first in Spanish-speaking Latin America

The first customs officers workshop hosted by a Latin American Spanish-speaking country took place in San Salvador on 4–6

September 2001. Thirty customs trainers, senior state officers and other stakeholders gathered for the event, which was funded by the Multilateral Fund.

The workshop focused on the

enforcement of legislation

related to import/export licenses for ODS and how to prevent illegal trade in ODS.

Organized by the Ministry of Environment and Environmental Resources (MARN) and UNEP DTIE, the workshop resulted in a remarkable agreement by four different agencies (MARN, customs, the department of justice and the police) to coordinate their efforts to combat and prevent illegal trade in ODS.

**Contact:** Francisco Guevara, NOU for El Salvador, e-mail: opozono@salnet.net

#### Crossing international borders to train customs officers

The task of combating illegal trade in ODS is a serious challenge for law enforcement at international borders, and it becomes nearly impossible when customs officers lack expertise and proper training in ODS identification. These issues and others were addressed at a five-day international train-the-trainers workshop held in Faridabad, India from 5–9 November 2001. Twenty customs representatives from India, Argentina, Senegal, Yemen, Mongolia, China and Oceania Customs Organisation took part in the workshop, which was hosted by UNEP and the Government of India in cooperation with the World Customs Organization (WCO).

The workshop was conducted by Dr Janusz Kozakiewicz from Poland and Ms Meenakshi Passi from India, with opening remarks given by Mr K.L. Verma, Chairman and the Central Board for Customs, Excise and Narcotics. Mr Robert Hepworth, UNEP Division of

Environmental Conventions, presided. Other participants included the CITES Secretariat.

**Contact:** Mr C. Viswanath, NOU for India, e-mail: ozone@del3.vsnl.net.in

#### Mongolia breaks new ground

Situated along the Chinese border, the Mongolian town of Zamiin-Uud Aimag was the site of a train-the-customs-officers workshop from 15–16 December 2001.

The two-day gathering was the first 'Phase II' workshop organized by the NOU. Forty-nine customs state inspectors and custom officers were trained by colleagues who themselves received training from UNEP experts in the first phase of the workshop. The lead instructors and speakers for the workshop were Prof. Adysuren Tsohio Borjigdhkan, Director of the NOU, and Ms S. Enkhtuya, Customs Inspector, General Customs Administration, Mongolia.

Customs officers' increased awareness of ODS and its impact on the environment will help prevent illegal trade activities that may develop due to scarcity and higher prices of ODS in the country.

**Contact:** Prof. Adysuren Tsohio Borjigdhkan, NOU for Mongolia, e-mail: ozoff@magicnet.mn or adyats@yahoo.com

#### Guatemala customs officers go electronic—new ODS licensing system

Guatemala's recently adopted national ODS licensing system is the main thrust of seven workshops that will ultimately provide the country with 150 trained experts on the subject. The first of these workshops, held in Guatemala City from 10–12 October 2001, drew 26 experts from eight institutions.

Participants were trained to use an existing electronic import validation system currently used by customs officers. They then learned to adapt the system to control ODS imports using licences issued by the Ministry of Environment and Natural Resources (MARN). Activities included practical, hands-on demonstrations of identification of ODS containers and ODS-containing equipment. The workshop was organized by MARN together with UNEP DTIE.

**Contact:** Hugo Figueroa, NOU for Guatemala, e-mail: techam@internetdetelgua.com.gt

#### Phase-out plan launched in Armenia

Armenia is the latest of a group of countries with economies in transition (CEIT) to be jointly assisted by UNEP and UNDP. Last January, with the assistance of these two organizations, Armenia's Ministry of Nature Protection (MNP) organized a national workshop to launch that country's ODS phase-out plan. During the workshop, the MNP obtained commitments from different key stakeholders to ensure successful implementation of the activities programmed.

Other CEITs assisted by UNEP/UNDP include Azerbaijan, Estonia, Kazakhstan, Latvia, Lithuania, Tajikistan, Turkmenistan, Uzbekistan, Georgia, Moldova and Kyrgyzstan (the last three of these Parties were reclassified as Article 5).

**Contact:** Dr Aram Gabrielian, NOU for Armenia, e-mail: root@nature.arminco.com

#### Uruguay targets illegal trade in ODS



*Uruguay workshop stressed MERCOSUR accord on ODS customs codification*

The importance of reaching an agreement at the level of MERCOSUR on customs codification of ODS was just one of the many issues discussed at a train-the-trainers workshop for customs officers in Montevideo, Uruguay from 27–29 November 2001. Organized by the National Directorate for the Environment (DINAMA), held under the framework of the Customs Training project financed by Environment Canada and implemented in cooperation with UNEP DTIE, the workshop drew 27 experts from eight institutions.

During the workshop, customs intermediaries and ODS importers met to discuss the importance of controlling and preventing illegal ODS trade, as well as national ODS legislation and its impact on these groups.

**Contact:** Luis Santos, NOU for Uruguay, e-mail: luisant@multi.com.uy

Workshop reports available at:  
[www.uneptie.org/ozonaction/library/reports](http://www.uneptie.org/ozonaction/library/reports)




**WORLD POLICY ROUNDUP**
**Thai tax hikes aim to lower ODS use**

In an effort to wean industries away from ODS and enable Thailand to meet its obligations to the world community, the Thai government recently approved new taxes on the industrial use of four ozone-depleting chemicals. The proposed measures will impose higher excise and import duties on CFCs, halons, methyl chloroform and carbon tetrachloride. Excise duty will be raised to 15 per cent and import duty from 1 to 5 per cent, both effective the day after the three laws are published in the Royal Gazette. From 2003, the excise duty will be doubled to 30 per cent. HCFCs and methyl bromide are exempted because they are used in the drying of farm produce.

**Contact: Ms Wanna Rodratana, Hazardous Substances Control Bureau, Ministry of Industry, Thailand, e-mail: hazard@narai.diw.qo.th**

**US EPA tightens up restrictions on Class I ODS**

A new rulemaking by the US EPA will replace a previous list of banned ODS-containing plastic foam products with a more encompassing prohibition. US EPA is also amending the list of banned products to include any air conditioning or refrigeration appliances that contain a Class I substance used as a refrigerant.

'New and compelling information' prompted the agency to issue the final rulemaking, which amends and strengthens current regulations supporting the ban on non-essential products that contain Class I ODS. According to the US EPA, the new data indicates that limited, continued use by some sectors of Class I ODS in certain products should be considered a 'non-essential use of Class I substances' due to the availability and widespread use of alternatives.

Products affected include aerosol products, pressurised dispensers, plastic foam products and air conditioning and refrigeration products that contain or are manufactured with Class I ODS, such as CFCs, halons and methyl chloroform.

**Contact: Cindy Newberg, US EPA, tel: +1 202-564-9729, www.epa.gov**

**Halon registration programme fires up in Malaysia**

Under a new law, Malaysian halon users who have not registered with the Fire and Rescue Department will face severe consequences—a fine of up to RM 10,000 (US\$2,600), a two-year jail sentence, or both. Designed to enable the department to keep tabs on the quantity and movement of halon in Malaysia, the 1999 Environmental Quality (Halon Management) Regulations went into effect this year, and 31 December 2001 was the registration deadline.

As of November 2001, the department had recorded 320 tonnes of halon 1301 and 8 tonnes of halon 1211 but only 35 tonnes and 4 tonnes of the respective compounds had been collected for storage in the Malaysia Halon Bank. Department Director General Jaafar said the department's target of achieving 'zero halon' by 2005 would not be realised without the co-operation of users and the public. Malaysia stopped halon imports in 1996.

**Contact: Mr Lee Choong Min, Department of Environment Malaysia, e-mail: lcm@jas.sains.my**

**US places MB on terrorism watch list**

Sales of the ozone-depleting fumigant methyl bromide (MB), as well as several other common chemicals should be monitored, says the US government. Citing concerns that such chemicals could be converted into explosives or poisons by terrorists, the Bush Administration is urging stores and distributors to keep track of sales of MB, as well as chlorine, sulphuric acid and hydrochloric acid. In addition, US EPA

**World Bank's projects for complete phase out of CFCs (... continued from page 1)**

Executive Committee of the Multilateral Fund for projects to phase out all remaining CFC consumption in the Bahamas, Malaysia, Thailand and Turkey. The projects, to be implemented by the World Bank, will result in a permanent global reduction of 7,468 ODP tonnes by 2010. UNEP will work with the Bank to implement the non-investment component of the Bahamas project.

These plans break new ground in that they solidify country commitments to end CFC consumption within an agreed schedule that matches compliance targets set by the Montreal Protocol.

The National CFC Phase-out Plans for

**Beijing Amendment enters into force**

New controls on ODS came into effect this year with the ratification of the Beijing Amendment to the Montreal Protocol. The amendment came into force on 25 February 2002, after having been ratified by 20 countries.

Under the amendment, countries have agreed to monitor the consumption and production of bromochloromethane, an industrial solvent which has an ozone-depleting potential of 0.12. The new controls will provide nations with a better understanding of the precise quantities of this substance being used and manufactured around the globe. Phase out for bromochloromethane should take place during 2002.

The Beijing Amendment also brings in new trade rules for hydrochlorofluorocarbons (HCFCs), banning imports and exports of HCFCs between countries who have not ratified the 1992 Copenhagen Amendment, and introduces controls on HCFC production.

**Contact: Michael Graber, Ozone Secretariat, e-mail: michael.graber@unep.org**

is working to compile a list of chemical and biological agents that could potentially be used to harm drinking water supplies.

**Contact: Tom Land, US EPA, e-mail: land.tom@epamail.epa.gov**

*World Policy Roundup was compiled by Atul Bagai*

Malaysia and Thailand will allow these two countries to channel much needed technical and financial assistance to a large number of small- and medium-scale enterprises in order to eliminate their dependency on CFCs. The Turkish Refrigeration Sector Plan will completely phase out three major CFCs (CFC-11, CFC-12 and CFC-115) four years ahead of the Montreal Protocol requirement.

In addition, the Bank, in partnership with UNEP, developed a Terminal CFC Phase-out Management Plan for the Bahamas. This will enable the Bahamas to completely phase out its consumption of all CFCs by 2008—two years ahead of the Montreal Protocol deadline.

**Contact: Sergio Jellinek, World Bank, e-mail: sjellinek@worldbank.org**

## Checking up on the ozone layer—European research assessment weighs in

Have we solved the problem of ozone depletion? An assessment report of European stratospheric research reveals conflicting trends. The report, released in January, shows that while chlorine levels in the atmosphere are slowly decreasing, bromine levels are growing, as is the appearance of ozone 'mini holes' over Europe. While acknowledging that the Montreal Protocol has been instrumental in the decline of ODS levels in the atmosphere, the report concludes that the possibility of severe ozone losses over the Arctic and Europe remains high. Due to atmospheric variability, ozone recovery will not even be measurable until 2010.

Highlighting the importance of international cooperation in ozone studies, the report covers European research efforts during the period 1996–2000, including the Third European Stratospheric Experiment on Ozone (THESEO)—the biggest EU-supported campaign ever to study the ozone layer. 'An international campaign like THESEO clearly demonstrates that a close integration of European and national programmes provides great benefits for science and for

carrying forward the EU's policies,' notes EU Commissioner for Research Philippe Busquin.

Other findings include increased ozone losses and changes in atmospheric circulation due to the observed cooling of the stratosphere. Circulation changes are responsible for the increase in ozone 'mini-holes' over Europe. The news is not all bad however. For example, nitrogen oxide emissions and line-shaped contrails from aircraft emissions seem to play a less important role with respect to climate change than previously suspected.

Twelve new EU projects have recently been signed to address questions brought up in the assessment, including modelling studies in the Antarctic, the Arctic, the tropics and middle latitudes over Europe. Issues to be addressed will include the role of particles in climate and in the stratosphere, tropical sources of stratospheric air and the impact of a potential supersonic aircraft fleet.

**Contact:** Georgios Amanatidis, Environment and Sustainable Development Programme, Research DG, e-mail: [georgios.amanatidis@cec.eu.int](mailto:georgios.amanatidis@cec.eu.int), [www.ozone-sec.ch.cam.ac.uk](http://www.ozone-sec.ch.cam.ac.uk)

## Ozone videos make international film festival debut

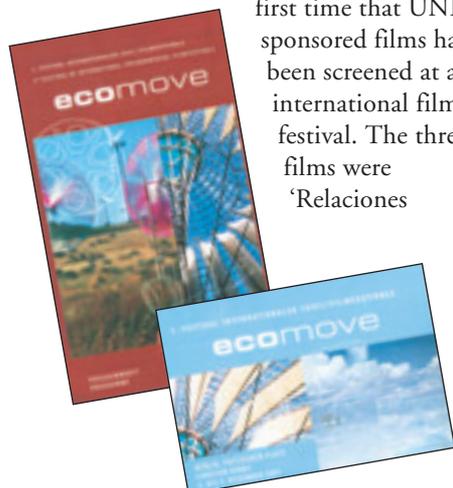
Ecomove, the First Festival of Environmental Film Festivals, was the showcase for three winning films from UNEP's Global Video Competition on Ozone Layer Protection (see OAN 40). Held in Berlin from 3–5 December 2001,

Ecomove marks the first time that UNEP-sponsored films have been screened at an international film festival. The three films were 'Relaciones

Peligrosas' (Dangerous Relations), by Pablo Massip Ginestá of Cuba, 'Magnificent Sky,' by Nogar Begiashvili of Georgia and 'Tomorrow,' a dramatic piece by Mohammed Karesly of Syria.

Ms Begiashvili was on hand to answer questions after the screening of her film, 'Magnificent Sky,' which presents a view of ozone protection through the eyes of children, using their drawings as a base. UNEP DTIE and Television Trust for the Environment (TVE) are working together to distribute the film.

The best entries from six international environmental film festivals were selected for Ecomove, which aims to attract attention to interrelated global and ecological issues. The festival will be held biannually in Berlin and go on tour in the years between. In 2002, the films will be shown in Johannesburg, South Africa. For more information, please visit [www.ecomove.de](http://www.ecomove.de)



## New publications



Prepared jointly by the Food and Agriculture Organization of the United Nations (FAO) and UNEP DTIE, the *Global Report on Validated Alternatives to the Use of Methyl Bromide*

for Soil Fumigation highlights successful alternatives to methyl bromide. [www.uneptie.org/ozonaction/library/tech/main.html#FAOREP](http://www.uneptie.org/ozonaction/library/tech/main.html#FAOREP)



The *Manual for Training of Extension Workers and Farmers: Alternatives to Methyl Bromide for Soil Fumigation* offers integrated pest management training for extension workers and

farmers who wish to replace methyl bromide as a soil fumigant. Prepared and published jointly by FAO and UNEP.

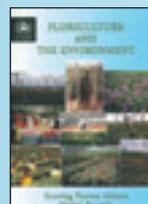
[www.uneptie.org/ozonaction/library/reports/main.html#FAO](http://www.uneptie.org/ozonaction/library/reports/main.html#FAO)



Aimed at owners, operators and employees of SMEs, *How Small and Medium-Sized Enterprises in Developing Countries can Protect the Ozone Layer* looks at current operations that use ODS

and provides tools to help reduce and eventually eliminate their use.

[www.uneptie.org/ozonaction/library/tech/main.html#sme](http://www.uneptie.org/ozonaction/library/tech/main.html#sme)



Based on actual experiences in the field, OzonAction's new release, *Floriculture and the Environment: Growing Flowers Without Methyl Bromide*, offers practical, reader-friendly

information on using MB alternatives in the commercial production of cut flowers.



*Inter-Linkages between the Ozone and Climate Change Conventions* investigates the interfaces and synergies between the Montreal and Kyoto Protocols, highlighting the need

and potential for greater coordination during MEA implementation.

[www.uneptie.org/ozonaction/library/policy/main.html#interlinkages](http://www.uneptie.org/ozonaction/library/policy/main.html#interlinkages)

## 1991–2002 summary status of contributions to the Trust Fund for the Multilateral Fund for the implementation of the Montreal Protocol

As at 20 February 2002

Source: United Nations Office, Nairobi

Party	Agreed Contributions	Cash Payments	Bilateral Assistance	Promissory Notes	Outstanding Contributions
Australia	27,774,978	24,268,522	1,224,505	0	2,281,951
Austria	15,708,821	14,000,913	131,790	0	1,576,118
Azerbaijan	821,435	0	0	0	821,435
Belarus	2,460,782	0	0	0	2,460,782
Belgium	19,684,410	17,728,471	108,480	0	1,847,459
Brunei Darussalam	0	0	0	0	0
Bulgaria	992,679	929,031	0	0	63,648
Canada	55,888,695	42,275,498	5,922,990	3,690,227	3,999,980
Cyprus	148,670	148,670	0	0	0
Czech Republic	4,790,017	4,587,349	0	0	202,668
Denmark	12,826,896	11,464,513	205,000	0	1,157,383
Estonia	75,372	50,248	0	0	25,124
Finland	10,701,993	9,238,379	451,870	0	1,011,744
France	116,781,125	50,147,937	7,421,995	41,659,984	17,551,209
Georgia	0	0	0	0	0
Germany	171,544,782	114,197,442	17,075,969	29,595,057	10,676,314
Greece	6,796,767	5,855,666	0	0	941,101
Hungary	2,795,639	2,594,646	0	0	200,993
Iceland	567,233	493,631	0	0	73,602
Ireland	3,781,816	3,406,630	0	0	375,186
Israel	4,782,864	3,439,546	0	0	1,343,318
Italy	89,988,031	77,250,448	3,374,489	0	9,363,094
Japan	284,000,945	241,034,803	3,821,888	0	39,144,254
Kuwait	286,549	286,549	0	0	0
Latvia	259,728	145,626	0	0	114,102
Liechtenstein	165,631	155,581	0	0	10,050
Lithuania	389,968	14,975	0	0	374,993
Luxembourg	1,227,109	1,113,213	0	0	113,896
Malta	28,052	28,052	0	0	0
Monaco	135,012	128,312	0	0	6,700
Netherlands	29,373,104	23,909,450	0	2,731,827	2,731,827
New Zealand	4,361,998	3,991,836	0	0	370,162
Norway	10,589,067	9,567,354	0	0	1,021,713
Panama	16,915	16,915	0	0	0
Poland	3,375,495	2,682,071	113,000	0	580,424
Portugal	5,319,539	4,585,212	0	0	734,327
Russian Federation	86,815,700	0	0	0	86,815,700
Singapore	531,221	459,245	71,976	0	0
Slovakia	1,607,114	1,541,791	0	0	65,323
Slovenia	61,290	61,290	0	0	0
South Africa	3,793,691	3,763,691	30,000	0	0
Spain	42,564,730	38,228,311	0	0	4,336,419
Sweden	21,484,793	18,875,181	735,850	0	1,873,762
Switzerland	21,891,244	19,568,781	427,730	0	1,894,733
Tajikistan	90,871	5,333	0	0	85,538
Turkmenistan	275,954	0	0	0	275,954
Ukraine	8,498,183	785,600	0	0	7,712,583
United Arab Emirates	559,639	559,639	0	0	0
United Kingdom	94,971,418	68,981,524	565,000	16,899,450	8,525,444
United States of America	400,251,570	322,449,437	10,817,191	8,600,000	58,384,942
Uzbekistan	518,174	105,500	0	0	412,674
<b>SUB-TOTAL</b>	<b>1,572,357,709</b>	<b>1,145,122,811</b>	<b>52,499,723</b>	<b>103,176,545</b>	<b>271,558,630</b>
Disputed contributions (*)	8,098,267	0	0	0	8,098,267
<b>TOTAL</b>	<b>1,580,455,976</b>	<b>1,145,122,811</b>	<b>52,499,723</b>	<b>103,176,545</b>	<b>279,656,897</b>

NB: (\*) In this table, the amounts disputed by France, Germany, Italy, Japan and the United Kingdom have been deducted from their agreed 1996 contributions and are shown here as an aggregate total only. Donor countries have the right to withhold up to 20 percent of their contributions for bilateral projects.

## Science news

### NASA to develop new ozone monitoring programme

Following the shut-down of the US National Aeronautics and Space Administration's (NASA) US\$35-million Quick Total Ozone Mapping Spectrometer (QuickTOMS) satellite, the agency announced it is considering a number of new ways to minimise the scientific impact of the loss.

According to associate administrator Ghassem Asrar, NASA is considering using the original TOMS Earth Probe satellite and extending an ailing ozone mapping mission beyond 2002. NASA may also keep its 10-year-old Upper Atmosphere Research Satellite (UARS) as a backup to the existing system. Although the system is not optimal, Asrar said it will serve its purpose until the Earth Observing System, Aura, is launched in 2003.

QuickTOMS project scientist Richard McPeters said that he is hopeful that TOMS Earth Probe will last until Aura is up and running. However, he admitted that there is no way of knowing how much longer the satellite's instruments will last. McPeters noted that continuing to use UARS makes sense because on-board instruments would enable researchers to continue monitoring ozone indirectly.

UARS project scientist Charles Jackman said that NASA researchers will most likely resume operations of the satellite's Halogen Occultation Experiment instruments in order to retrieve valuable data on the presence of ODS in the atmosphere.

Contact: NASA GFSC, [www.gfsc.nasa.gov](http://www.gfsc.nasa.gov)

### UV radiation levels pose problem in Santiago

Increasing levels of ultraviolet (UV) radiation are causing more and more 'red alert' days in the Chilean capital of Santiago. Red alerts are issued when the UV index is between 10 and 15, and the government warns people to limit their exposure to the sun during these times.

The erosion of the ozone layer over Antarctica has manifested itself in heightened UV radiation levels in Chile for some time, but government authorities said the problem will be bigger than ever this year. Skin cancer already causes more than 230 deaths in Chile each year, and Institute of Ecological Policy president Manuel Baquedano is worried that the public does not take the health threat from UV radiation as seriously as it should. 'Ultraviolet radiation is a killer that acts slowly,' said Baquedano, who is pushing for the government to mount a public awareness campaign.

Contact: Mr Jorge Leiva, NOU for Chile, e-mail: [jleiva@conama.cl](mailto:jleiva@conama.cl)

## ILLEGAL TRADE UPDATE

### United States

- Federal prosecutors have charged two former executives of a subsidiary of Airgas Inc. of Radnor, Connecticut of illegally avoiding US\$20 million in import fees and taxes on imported freon and of defrauding Airgas Inc. in a US\$3.5 million deal.  
(Source: US Dept. of Justice)
- A federal grand jury in New Haven, Connecticut has returned an indictment charging five men for allegedly engaging in a scheme to trade in chemicals that deplete the Earth's ozone layer and that are strictly regulated in the United States.  
(Source: US Dept. of Justice)
- In January, Patrick Palmer and Chester Risker of Fort Lauderdale, Florida, pleaded guilty to violating the Clean Air Act by illegally importing approximately 300 cylinders of the illegal CFC refrigerant R-12 from the Bahamas. Some of this contraband was then sold to Florida businesses. R-12 is commonly used in air conditioners in cars that were manufactured before 1994. When sentenced, each defendant faces up to five years in prison and/or a fine of up to US\$250,000. The case is being prosecuted by the US Attorney's Office in Miami.  
(Source: US EPA)

### Japan

- Four men convicted of smuggling a large volume of a restricted ODS into Japan were given suspended prison terms by a district court. The men were sentenced to two-year prison terms (which were suspended for four years), and each ordered to pay a one million-yen penalty. Both the production and import of CFCs have been banned in Japan since late 1995, but authorities say the products are smuggled in from developing countries where CFC production is still permitted.  
(Source: The Japan Times, 11 January 2002)

### CFC smugglers in US get prison terms

One of the largest illegal CFC smuggling cases ever prosecuted in the USA ended in guilty pleas this March, when Barry Himes, John Mucha and Richard Pelletier admitted to conspiring to smuggle CFCs by means of false statements to US Customs and the Environmental Protection Agency. The trio also pleaded guilty to evading attempts to collect excise and income taxes on proceeds from the sale of the contraband. The illegal scheme to import some 600 metric tonnes of CFCs into the USA will result in prison terms of six to eight years for the smugglers, who are also facing charges for excise tax evasion on an additional 1,000 tonnes of the ODS.

Multiple offshore bank accounts in the Bahamas and Antigua, as well as other corporate bank accounts in Nevada and New York were used to conceal income and create the illusion that proceeds from the CFC sales were going to unrelated third parties.

The defendants agreed to forfeit a US\$2 million mansion, a three-carat diamond ring and two luxury automobiles, all of which were purchased from the smuggling proceeds. A total of ten individuals have pleaded guilty to federal charges in connection with the investigation.  
(Source: US Dept. of Justice)

## WEB Watch



### New European website on fluorocarbons

Fluorocarbons (HFCs) are an important ingredient in safe refrigerants, insulating gases, medical aerosols and other materials. Discover their main applications as well as technology, safety, economic and regulatory aspects at [www.fluorocarbons.org](http://www.fluorocarbons.org), an all-fluorocarbons website produced by the European Fluorocarbon Technical Committee (EFCTC) in association with the European Chemical Industry Council (CEFIC).

**Contact: Mr Bent Jensen, European Chemical Industry Council, e-mail: [bje@cefic.be](mailto:bje@cefic.be)**



### Cyber-NOUs: Argentina

The National Ozone Unit of Argentina has launched an informative and attractive website that offers a comprehensive look at the ozone situation in that nation. The site provides loads of background information on the ozone layer and the Montreal Protocol, as well as up-to-the-minute info on environmental news, events and documentation. The Spanish-language site includes a library, links to international and national organizations, a search engine, and features on the Country Programme, NOU projects and recent workshops and meetings. Located at [www.medioambiente.gov.ar/ozono](http://www.medioambiente.gov.ar/ozono), the site also offers a direct e-mail link with the NOU and other ozone offices.

**Contact: Dr Miguel Angel Craviotto, NOU for Argentina, e-mail: [mcraviotto@medioambiente.gov.ar](mailto:mcraviotto@medioambiente.gov.ar)**

## The National Ozone Unit Interview

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

### Veronica Alleyne



**NOU Officer, Jamaica**  
e-mail: [nrcapcwm@infochan.com](mailto:nrcapcwm@infochan.com)

*Your country's data currently shows that Jamaica is in compliance with the 1999 freeze, but that it may have difficulties in meeting the 50 per cent CFC reduction scheduled for 2005. As ODS officer, can you tell us how you intend to face these challenges?*

In order to ensure that the country met the 1999 freeze, the government of Jamaica developed new legislation, the Trade Restriction on Importation (Chlorofluorocarbons) Order of 1999. This law not only regulates the import of CFCs through a quota system, but also provides a schedule for reduction of CFC imports on an annual basis, achieving total phase out by January 2006. With this legislation in place, Jamaica is now expected to meet the 50 per cent CFC reduction scheduled for 2005. Successful monitoring of CFC imports through a permit and licence system demonstrates Jamaica's commitment to this effort.

*One challenge facing developing countries is the low cost of CFCs relative to that of their alternatives. What policy has Jamaica put in place to make CFC prices less attractive?*

The legislation restricting importation of CFCs has also reduced the availability of these chemicals. Scarcity of CFCs on the market has resulted in escalating prices. In the past year, we have received reports that the price of CFC-12 was on par with that of HFC-134a, while R-502 was even more expensive than viable alternatives.

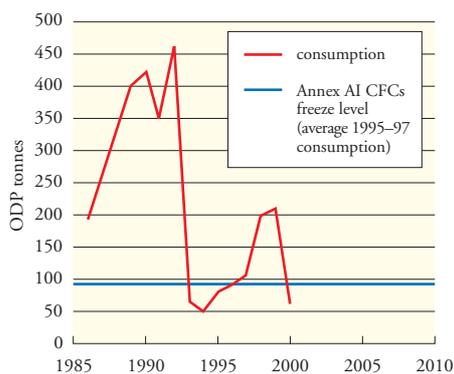
*You have recently successfully completed the customs training project under Jamaica's Refrigerant Management Plan. Can you give us some examples of how this training has been useful?*

The customs training project has greatly increased customs officers' awareness of ozone layer depletion and steps being taken worldwide to correct this problem. This awareness is being reinforced through continued mini training sessions held at ports of entry island-wide, as well as the incorporation of the ODS module into the customs training programme for new recruits. Also, the Customs Department is now actively detaining CFC-containing equipment coming into the country.

*One problem that you have identified is the difficulty of controlling the entry of CFCs along Jamaica's coast. What action would be necessary to detect and prevent such imports?*

The Customs Department currently searches all boats landing or fishing in Jamaican waters, and any goods being brought into the country illegally are confiscated. However, discussions with customs officials have revealed that to effectively control the illegal entry of CFCs along Jamaica's coast, certain measures are needed. Continued collaboration between the Customs Department, the Marine Police and the Coast Guard and air wing of the Jamaica Defence Force is required, as well as cooperation between respective regional agencies. Internationally, shared intelligence on exports is also necessary. In light of these observations, perhaps the customs officers training programme should be extended to include other relevant agencies such as the police and coast guard.

#### Trend in consumption of CFCs in Jamaica



Source: Data reported to Ozone Secretariat as per Article 7

### Forthcoming meetings

TEAP, 29 April–3 May 2002,  
Budapest Hungary

Review Panel Meeting of the Scientific  
Assessment Panel, 24–28 June 2002,  
Les Diablerets, Switzerland

Refrigeration, AC and HP TOC,  
14–15 July 2002, Purdue University,  
Indiana, USA

37th Meeting of the Executive  
Committee, 17–19 July 2002,  
Montreal, Canada

22nd Open-Ended Working Group  
Meeting of the Parties to the Montreal  
Protocol, 23–25 July 2002,  
Montreal, Canada

Ad hoc Working Group Replenishment,  
26 July 2002, Montreal, Canada

### Status of Ratification

(as at 19 February 2002)

#### The Vienna Convention

184 Parties. New Parties: Nauru,  
São Tomé and Príncipe

#### The Montreal Protocol

183 Parties. New Parties: Nauru,  
São Tomé and Príncipe

#### The London Amendment

163 Parties. New Parties: Dominican Republic,  
Guatemala, Honduras, Madagascar, Micronesia,  
Nigeria, São Tomé and Príncipe, Sudan

#### The Copenhagen Amendment

140 Parties. New Parties: Dominican Republic,  
Guatemala, Honduras, Madagascar, Maldives,  
Micronesia, Nigeria, São Tomé and Príncipe,  
Sudan

#### The Montreal Amendment

78 Parties. New Parties: Guatemala, Democratic  
People's Republic of Korea, Madagascar, Maldives,  
Micronesia, Nigeria, São Tomé and Príncipe, Togo

#### The Beijing Amendment

27 Parties. New Parties: Guatemala, Democratic  
People's Republic of Korea, Madagascar,  
Micronesia, Netherlands, Norway, Panama,  
St Lucia, São Tomé and Príncipe, Spain, Togo

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

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