



# zonAction



UNEP TIE quarterly publication • OzonAction Programme under the Multilateral Fund

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

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## View point



*Mr Xie Zhenhua,  
Minister of State  
Environmental  
Protection  
Administration, China*

After celebrating the 50th anniversary of the People's Republic of China, Beijing is now ready to welcome another significant gathering—the 11th Meeting of the Parties to the Montreal Protocol. China is very honoured to host this event, especially as 1999 marks an important milestone for implementing the Montreal Protocol: the freeze in production and consumption of CFCs in developing countries from 1 July.

In China, assisted by the Multilateral Fund, more than 200 enterprises consuming ozone-depleting substances have converted their production lines or are now doing so. Thirty-three CFC and halon producing plants have been closed down. China will freeze its CFC production and consumption on schedule and is confident that all necessary efforts will be made to achieve 50 per cent reduction in 2005.

The 11th Meeting of the Parties will not only determine the Multilateral Fund's replenishment for 2000–02 but may also decide to accept adjustments and amendments to the Montreal Protocol. The Meeting will therefore be extremely important and will have historical significance, consolidating past achievements and setting our direction for the future. Particular consideration should be given to the special needs of developing countries and to the essential role of the Multilateral Fund in promoting international cooperation on ozone layer protection. If the Parties are guided by the principle of 'common and differentiated responsibilities', they will arrive at a successful outcome.



*Dr Klaus Töpfer,  
Executive Director,  
UNEP*

The Montreal Protocol is rightly hailed as an example of successful international environmental cooperation. But we must beware of complacency. As we approach the 11th Meeting of the Parties the ozone layer is still depleted, many challenges remain and new ones are emerging.

In July 1999, developing countries faced their first control measures on CFCs. Many are likely to meet or even exceed their target, thanks largely to assistance from the Multilateral Fund. Adequate replenishment of the Fund is vital to keep up this momentum.

The recent agreement to phase out CFC production in China is encouraging and we will soon see approval of a similar agreement with India. These agreements, together with initiatives in the Russian Federation, will phase out more than 75 per cent of the world's remaining CFC production.

Hosting of the 11th Meeting of the Parties by the People's Republic of China at this juncture is more than symbolic. If one of the world's largest developing economies continues to meet its global environmental obligations and sets the example, other smaller countries will surely follow.

As we set our course towards ozone layer recovery for the middle of the next century, new challenges such as the links between ozone depletion and climate change are emerging. Meeting these new challenges will require an integrated response to environmental issues which can only be achieved through intensified international cooperation.

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**A message from the  
Secretary General of the United Nations,  
on the occasion of the International Day  
for Preservation of the Ozone Layer,  
16 September 1999:**

*"Whoever we are, wherever  
we live, whatever we may do,  
we all have an important  
stake in the preservation  
of the ozone layer."*

*Kofi Annan,  
Secretary General of the  
United Nations*

## News from international agencies



### Fund Secretariat

The Fund Secretariat organized the 28th Executive Committee (ExCom) Meeting and the meeting of its Subcommittees, held in Montreal on 14–16 July 1999. It then communicated the decisions of the ExCom Meeting to relevant governments and arranged transfer to the implementing agencies of US\$67.4 million of Multilateral Fund resources approved for projects.

In August 1999, the ExCom's Chairman and its Chief Officer visited China where they met with the Vice-Minister of the State Environmental Protection Administration (SEPA). They also met officials from the Ministry of Public Security, SEPA, the Tibet Autonomous Region and administrators from industry. Issues including China's ratification of the Copenhagen Amendment and projects to phase out ozone-depleting substances were discussed.

The Secretariat also participated in methyl bromide workshops—in China in August and in Malawi in early September.

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### UNEP TIE OzonAction Programme

Meetings of the ODS Officers networks for South Asia, Latin America and the Caribbean (see page 5), Southeast Asia and the Pacific, and English and French speaking Africa were held in Thailand, Venezuela, Australia and the Seychelles respectively. An innovative network of Ozone and Climate Change Officers has been initiated for Baltic and Nordic countries.

The UNEP TIE OzonAction Programme assisted Article 5 countries in the celebration of International Ozone Day on 16 September 1999 (see pages 7 and 8).

Two workshops on control of, and alternatives to, methyl bromide were organized: one in China and one in Malawi (see page 6). UNEP organized a roundtable at the Earth Technology Forum on 'Two Protocols & One Programme', held in Washington in September 1999.

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### UNEP Ozone Secretariat

The Secretariat drafted and sent out the working documents for the 5th Meeting of the Conference of the Parties to the Vienna Convention and for the 11th Meeting of the Parties to the Montreal Protocol, to be held in November/December of this year, in Beijing. Meeting documents and other relevant information are available on the Secretariat's website:

<http://www.unep.org/ozone> or <http://www.unep.ch/ozone>

Between July and September, the Secretariat participated in workshops and meetings in the Bahamas, Israel, Malawi, Switzerland and USA. The Secretariat also prepared for celebration of the 1999 International Day for the Preservation of the Ozone Layer, held on 16 September.

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### UNDP

The 28th ExCom Meeting approved 55 UNDP investment projects worth a total of US\$15.6 million. The projects to be implemented in 11 countries (Argentina, Brazil, China, India, Iran, Lebanon, Malaysia, Nepal, Nigeria, Syria and Thailand) will eliminate 2,036 ODP tonnes in the aerosols, foams, halon, refrigeration and solvents sectors.

The 28th ExCom also approved India's halon sector phase-out strategy which was prepared with assistance from UNDP. This resulted in approval of six projects for fire extinguisher conversion in India which will eliminate 350 tonnes of halons per year.

UNDP is also assisting Brazil with completion of its national survey of ODS use in small and medium-sized enterprises. The survey will be a critical factor in designing effective sectoral phase-out strategies for Brazil.

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e-mail: [frank.pinto@undp.org](mailto:frank.pinto@undp.org) <http://www.undp.org/seed/eap/montreal>



### UNIDO

At its 28th meeting, the ExCom approved implementation by UNIDO of 32 investment projects which will eliminate 1,709 ODP tonnes in the aerosols, foams and refrigeration sectors. The projects cover the compressor and solvents sectors (TCA and CTC).

An investment project aiming at total phase out of methyl bromide in the tobacco sector in Brazil was also approved. This would eliminate 84.4 ODP tonnes.

A number of projects were also approved within the framework of the Refrigerant Management Plans for Croatia, Honduras, Jordan, The Former Yugoslav Republic of Macedonia, Romania and Sudan. These will cover areas such as training of trainers, customs training, recovery and recycling, and technical assistance and support in developing regulations on ozone-depleting substances.

**Contact:** Mr H. S Yalcindag, UNIDO, P.O. Box 300, A-1400 Vienna, Austria, tel: +431 26026 3782, fax: +431 26026 6804, e-mail: [adambrasio@unido.org](mailto:adambrasio@unido.org) <http://www.unido.org>



### World Bank

The 28th ExCom Meeting approved funding for a number of projects:

- US\$24.15 million for investment projects in Argentina, China, Colombia, India, Thailand and Turkey.
- US\$500,000 for the Chiller Concessional Lending Pilot Project for Mexico. This is a UK bilateral project which will be implemented through the World Bank.
- US\$350,000 to support ongoing institutional strengthening projects in Ecuador, Jordan and the Philippines.
- US\$10 million for the second tranche of funding to assist China in completing the 1999 Annual Programme under the Sector Plan for CFC Phase Out.

The Meeting also approved the Bank's Annual Progress Report

**Contact:** 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](mailto:sgorman@worldbank.org), Internet: <http://www-esd.worldbank.org/mp/>

## Industry and technology updates

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

### REFRIGERANTS

#### Replacement of CFC chillers in US slower than expected

At the beginning of the 1990s there were 80,000 chillers using CFCs for comfort cooling in the United States (USA). In 1999, almost two-thirds of these have not been retrofitted and still use CFCs. This fact is revealed by a survey of chiller manufacturers by the US Air-Conditioning and Refrigeration Institute (ARI). Earlier surveys indicated that by 1 January 1999 there would be many thousands fewer such chillers still in use.

In spite of the ban on production of CFCs that came into effect in 1995, cooled water from CFC-using chillers continues to provide air conditioning in buildings throughout the USA. At the current rate of replacement, it will take until 2010 to eliminate CFC chillers. With so many CFC-using units still in service, manufacturers look likely to experience steady demand for replacement chillers for many more years than expected.

**Contact:** Air-Conditioning and Refrigeration Institute, 4301 North Fairfax Drive (#425), Arlington, VA 22203, USA.

### SOLVENTS

#### Bringing supercritical CO<sub>2</sub> out of the laboratory

DuPont has recently announced plans to build a US\$40 million development facility in North Carolina, USA, to evaluate supercritical carbon dioxide (CO<sub>2</sub>) as a reaction solvent for the production of its Teflon brand fluoropolymers. If the technology proves successful, the company plans to follow up with a commercial-scale facility costing some US\$235 million. DuPont is investigating the possibilities of supercritical CO<sub>2</sub> as an alternative to water and to CFC-based solvents.

Some compounds are already being used in the supercritical state to replace substances such as methylene chloride, currently being scrutinized with a view to regulation. Today, medicinal botanicals,

specialty chemicals and vitamins are all being extracted using CO<sub>2</sub>.

**Contact:** DuPont International, fax: +41 22 717 6077

### FOAMS

#### HFC-245fa a good candidate for replacement of HCFC-141b

A joint study by Bayer Corporation and Whirlpool Corporation indicates that HFC-245fa has the technical characteristics to make it a successful replacement for HCFC-141b. The study also indicates that investment cost for the switch from HCFC-141b to HFC-245fa may be lower than previously thought.

HCFC-141b is widely used to replace CFC-11 as the blowing agent for manufacture of insulating foams for domestic refrigerators. However, it will be banned for use in foam blowing in the USA from 1 January 2003, so a replacement must be found.

A potential problem was HFC-245fa's relatively low boiling point (15° C) which raised questions about the need for high investment in new equipment. However, the research by Bayer and Whirlpool indicates that HFC-245fa does not require processing at temperatures lower than those generally in use today, and that such investment is therefore probably not necessary.

**Contact:** Whirlpool, fax: +1 616 923 3785

### AEROSOLS

#### First non-CFC inhaler launched outside of Europe and USA

Cipla, India, has produced the first CFC-free inhaler to be developed outside of Europe and the USA. The new inhaler is soon to be released onto Cipla's domestic market under the trade name of Asthalin HFA. The company is also currently working on registration for export to major markets including Europe and South Africa.

Development of the Asthalin HFA required around four years of research work and considerable investment. However, Cipla hopes to recover this easily

## World policy roundup

### Jamaica: meeting Protocol obligations on CFCs

Jamaica is freezing its importation of CFCs as part of the island's obligations under the Montreal Protocol. The total amount imported between July 1999 and June 2000 is to be limited to 96 tonnes, under a quota system which became effective as of 1 July 1999.

**Contact:** Natural Resources Conservation Authority, 10 Caledonia Avenue, Kingston 5, Jamaica, West Indies; tel: + 1876 754 7543, fax: +1876 754 7595

### UK: ozone-friendly asthma inhalers will assist effort to restore ozone layer

The UK's Environment Minister marked this year's International Day for Preservation of the Ozone Layer by announcing that asthma inhalers which use ozone-depleting substances are to be largely phased out in the UK within the next three years (see *New Publications* on page 10).

**Contact:** Department of Transport, Environment and Regions; tel: +44 (0)171 890 3041, e-mail [press@detr.gov.uk](mailto:press@detr.gov.uk)

## United Nations premier environmental prize awarded to Nobel Laureate Mario J. Molina

The 1999 UNEP Sasakawa Environment prize has been awarded to Professor Mario J. Molina of the Massachusetts Institute of Technology (MIT) for his outstanding contributions in the field of atmospheric chemistry.

Commenting on the award, Lord Stanley Clinton-Davies, Chairman of the Selection Committee, said "his leadership greatly contributed to making the UNEP-brokered Montreal Protocol a reality."

Professor Molina, who was awarded the 1995 Nobel Prize for Chemistry, is continuing his research on stratospheric chemistry and tropospheric pollution including pollution problems of rapidly growing cities.

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as its product will be marketed at a much lower price than most currently available inhalers. The company is hoping for a 3–6 per cent share of the European aerosol market, estimated to be worth around US\$1.7 billion.

**Contact:** Cipla <http://www.cipla.com/wnew.html>

## A QUIET REVOLUTION IN CHINA

**W**ith production and consumption of 51,000 ODP tonnes in 1998, China is the world's largest producer and consumer of CFCs at present. However, the country has recently taken a number of steps which demonstrate its commitment to achieving the goals of the Montreal Protocol. In fact, China's initiatives go way beyond the 'meaningful participation' of some other developing countries in 'saving our skies'.

In 1999, China began closing down its CFC manufacturing facilities. This was the first time that any developing country had closed down chemical plants in an effort to protect the global environment and to comply with an international environmental agreement.

Today, China is also the first developing country to have developed its own process for manufacture of the non-ozone depleting refrigerant HFC-134a to international standards. While closure of the CFC-producing plants was backed by financial assistance from the Multilateral Fund, the efforts on development and manufacturing of HFC-134a were entirely China's own.

Mr Hu Huanxing, Director of the Xian Modern Chemical Research Institute, (MCRI)—where the manufacturing process was developed and also China's largest chemical research institution—and Mr Zhang Ming Yuan, General Manager of Xian Jinshu Modern Industry Co. Ltd. (JMIC)—an offshoot of the Tibet Jinzhu Co. Ltd., Lhasa, which produces HFC-134a commercially—talked to OzonAction News about their project. Excerpts from their discussions with Mr Rajendra Shende, Chief of UNEP TIE's Energy and OzonAction Unit, are reproduced below.

The Modern Chemical Research Institute where research and process development took place



Mr Hu Huanxing, Director of the Modern Chemical Research Institute

- Why has China pursued the development and manufacture of HFC-134a when this ozone-friendly substitute is widely available on the international market?

"HFC-134a is a substitute for CFC-12 in a number of refrigeration and air-conditioning applications. Many of these applications, such as food preservation, are critical to the development of China's fast growing economy. We cannot depend entirely on supplies of this useful refrigerant from outside sources, and therefore decided to develop and manufacture HFC-134a by ourselves."

- The chemistry of HFC-134a is more complex than that of CFC-11 and 12, so what were the main challenges in development of the process?

"The reaction leading to HFC-134a is a two-step process, as against one step for CFC-11 and 12. Temperatures are higher and purification by distillation is complicated. The key challenge was the development of a very efficient catalyst with high selectivity. Another challenge was the selection of construction materials able to withstand very corrosive reactions. In more than five years, our research scientists tried 300 catalysts and selectively tried the process in a 10 tonnes per annum (TPA) plant at the MCRI. Our present catalyst is one of the most efficient."

- Did you have any cooperation from international expertise and companies?

The difficulty in accessing technology for HFC-134a manufacture is one of the reasons why China set out on its long march to develop this technology. We had no cooperation from any international body. The developmental efforts including scale up from 10 TPA to 200 TPA are entirely Chinese.

- Xian is the cultural capital and birthplace of China's history. Why was this historical city selected for such a modern chemical plant?

"MCRI, our largest chemical research institute, is located at Xian. It is very important that scientists and engineers work together at every stage of the development process. Trichloroethylene (TCE) and hydrofluoric acid (HF) are available not far from Xian. We also feel that this historical process development adds to the reputation of our city."

- Having successfully commercialized the process, what next?

"Our next goal is to draw up a plan to produce 5000 TPA by 2001. It is important to catch up with the fast expanding demand for HFC-134a in China, particularly in the mobile air-conditioning sector. We would also like to continue developing a green catalyst with near zero by-products. We are requesting assistance from UNEP's Cleaner Production Programme for this purpose."

- HFC-134a is a greenhouse gas and one of the six gases to be controlled under the Kyoto Protocol. How do you see the prospects for HFC-134a in this context?

"HFC-134a is not to be phased out under the Kyoto Protocol as is the case for CFCs under the Montreal Protocol. To respect the measures of the Kyoto Protocol, we are launching a plan to control emissions of HFC-134a. We are asking UNEP to be our partner in these efforts to promote good practices for emission control of HFC-134a manufacturing plants as well as in the user and servicing sectors."

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fax: +33 1 44 37 14 74, e-mail: [ozonaction@unep.fr](mailto:ozonaction@unep.fr)

The present HFC-134a production facility



## 28th ExCom Meeting

The 28th ExCom Meeting, held in Montreal on 14–16 July 1999, approved a total of US\$67.4 million for funding of implementing-agency and bilateral-agency projects. The ExCom Meeting was preceded by meetings of the Project Review and Monitoring Evaluation and Finance subcommittees.

Chaired by the USA, the ExCom Meeting discussed progress reports from the implementing agencies and a number of policy issues. The main decisions included the following:

- The agencies should report on project implementation delays at the 29th Meeting, in accordance with a list prepared by the Secretariat. They should also encourage cooperation between agencies and the national governments in Article 5 countries in order to develop umbrella projects and sector approaches.
- A request should be made to the Secretariat to prepare a document—in consultation with the implementing agencies—on various technical issues relating to consequences of project cancellation.
- Implementing agencies should submit a preliminary report to the 29th ExCom analysing the baseline data for Article 5 countries. The data will be used for planning for the next triennium.
- Guidelines are to be adopted for end-user conversion in the commercial

refrigeration sector. This will be for an initial 18-month period, followed by review.

- Members of the ExCom are to be invited to submit comments on the principles of concessional lending, presented by the Canadian representative and noted during the meeting. These are to be discussed at a large-scale meeting during the 29th ExCom.
- Implementation of the new administrative costs was noted and a request is to be made to implementing agencies to provide more information on the different types of retroactive projects. A request is to be made to the World Bank to clarify the figure of 3 per cent for the financial intermediary and to identify approved projects which could be classified as SMEs, in accordance with the definition provided.
- The remaining US\$10 million in the 1999 tranche was approved for implementation of the Agreement for the China Production Sector.

The next meeting of the ExCom will be in Beijing, China, on 24–26 November 1999.

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**fax: +1 514 282 0068,**  
**e-mail: secretariat@unmfs.org,**  
**http://www.unmfs.org**

## Network news

### South Asia follow-up meeting: examining the issues

Awareness raising activities for Ozone Day, concerns relating to SMEs and delays in RMPs, the urgent need for technology choices, and ratification of the Copenhagen Amendment were among the issues discussed at the recent South Asia Regional Network Follow-up Meeting.

The meeting, held in Bangkok on 27–28 September 1999, was attended by representatives from China, India, Iran, DPR Korea, Mongolia, Nepal and Sri Lanka.

**Contact: Mr Thanavat Junchaya, Regional Network Coordinator, UNEP ROAP, fax +662 280 3829, e-mail: junchaya.unescap@un.org**

### Main Meeting of the ODS Caribbean Network: looking for integrated solutions

A recommendation that countries should consider projects integrating a number of environmental issues and that would be

fundable by the GEF was an important outcome of the Main Meeting of the ODS Caribbean Network, held in Nassau on 27–29 July.

The meeting also discussed aspects of illegal trade in ODS and licensing systems.

**Contact: Ms Catalina Mosler, Regional Network Coordinator, UNEP/ROLAC, fax: +525 202 0950**

### *An innovative network of Ozone and Climate Change Officers*

*“Harmonized response to the Montreal and Kyoto Protocols will contribute to Integrated Environmental Management.”* This was the resounding message from the preparatory meeting of the Ozone and Climate Change Officers of the Baltic and Nordic countries (Estonia, Latvia and Lithuania, held in Tallin, Estonia, on 14 October 1999).

This innovative network of Ozone and Climate Change Officers was initiated by UNEP TIE, supported by the Government of Finland.

**Contact: UNEP TIE, fax: +33 1 44 37 14 74**

## Status of contributions to the Multilateral Fund as at October 1999

| Party                    | Agreed contributions (US\$) | Outstanding contributions (US\$) |
|--------------------------|-----------------------------|----------------------------------|
| Australia                | 2,719,451                   | 385,120*                         |
| Austria                  | 1,589,409                   | -15,162**                        |
| Azerbaijan               | 215,902                     | 215,902                          |
| Belarus                  | 537,459                     | 537,459                          |
| Belgium                  | 1,851,248                   | 1,742,768                        |
| Canada                   | 5,700,741                   | 5,480,912                        |
| Czech Republic           | 477,741                     | 0                                |
| Denmark                  | 1,318,383                   | 0                                |
| Finland                  | 1,134,636                   | 1,114,636                        |
| France                   | 11,773,570                  | 10,726,630                       |
| Germany                  | 16,615,295                  | 11,062,835                       |
| Greece                   | 698,237                     | -101,763                         |
| Hungary                  | 257,245                     | 0                                |
| Iceland                  | 55,124                      | 0                                |
| Ireland                  | 385,868                     | 385,868                          |
| Israel                   | 491,522                     | 154,949                          |
| Italy                    | 9,550,235                   | 9,550,235                        |
| Japan                    | 28,361,303                  | 25,853,803                       |
| Latvia                   | 139,131                     | 139,131                          |
| Liechtenstein            | 18,375                      | 18,375                           |
| Lithuania                | 156,185                     | 156,185                          |
| Luxembourg               | 128,623                     | 0                                |
| Monaco                   | 18,375                      | 2                                |
| Netherlands              | 2,916,979                   | 0                                |
| New Zealand              | 440,992                     | -13,209                          |
| Norway                   | 1,028,982                   | 0                                |
| Poland                   | 620,145                     | 0                                |
| Portugal                 | 505,303                     | 505,303                          |
| Russian Federation       | 8,176,728                   | 8,176,728                        |
| Slovakia                 | 151,591                     | 146,591                          |
| Spain                    | 4,341,016                   | 4,341,016                        |
| Sweden                   | 2,255,491                   | 451,088*                         |
| Switzerland              | 2,223,335                   | 2,223,335                        |
| Tajikistan               | 36,749                      | 36,749                           |
| Turkmenistan             | 59,718                      | 59,718                           |
| Ukraine                  | 2,094,712                   | 2,094,712                        |
| United Kingdom           | 9,766,137                   | -565,000                         |
| United States of America | 38,833,333                  | 24,045,657                       |
| Uzbekistan               | 252,652                     | 252,652                          |
| <b>TOTAL</b>             | <b>157,897,921</b>          | <b>109,163,224</b>               |

\* Outstanding contributions wholly or partially withheld for bilateral contribution

Minus figure represent credits to the donor

## Ratification of Copenhagen Amendment to be a priority for China

*“China should take rapid steps to ratify the Copenhagen Amendment before the end of the year.”*

This significant statement was one of the main recommendations of the Consultative Meeting held in Beijing on 26–29 July 1999. For developing countries that are Parties to the Montreal Protocol, ratification of the Copenhagen Amendment means agreeing to freeze and then phase out production and consumption of methyl bromide in accordance with a timetable set by the Protocol. China is the largest consumer and producer of methyl bromide among developing countries and its use of the substance is expected to grow in the future. Controlling methyl bromide is the single largest remaining challenge for China where phase out of ozone-depleting substances is concerned.

The main objective of the Consultative Meeting, organized jointly by the China State Environmental Protection



*A large proportion of China's consumption of methyl bromide is for soil fumigation in glasshouses.*

Administration (SEPA) and the UNEP TIE OzonAction programme, was to discuss and finalize a strategic framework to curb the growth of methyl

bromide production and consumption in China, and to promote the adoption of safe and effective alternatives to its use. A Communication Strategy to help strengthen the skills of farmers in using alternative technologies will also be an integral part of a sectoral approach to the phase out of methyl bromide. Further recommendations from the workshop include the prioritization of a range of short-, medium- and long-term policy options to support methyl bromide phase out, including priorities for research, development and training.

The results of the Consultative Meeting will provide China's authorities with valuable policy and technical information which, it is hoped, will hasten ratification.

**Contact as below.**

## Eastern and Southern African Countries move to develop plans for methyl bromide phase out

A Workshop on Methyl Bromide Alternatives for Eastern and Southern African Countries, held in Lilongwe, Malawi on 7–10 September 1999, identified awareness-raising activities, farmer education and training, policy development, and on-farm demonstrations as key activities in promoting replacement of methyl bromide in the region.

The purpose of the meeting, organized by the UNEP TIE OzonAction Programme with the governments of The Netherlands and Malawi, and in cooperation with TNO Netherlands, was to raise awareness about the impending phase out of methyl bromide and about the availability of safe and effective techniques to replace it.

The Lilongwe workshop featured presentations from experts on various techniques and Integrated Pest Management (IPM) systems that can replace methyl bromide for protection of tobacco, cut flowers and other horticultural crops. Another major focus was the development of training strategies to promote the widespread adoption of alternatives. Field demonstrations were



*Participants look at alternatives to methyl bromide during a field visit*

held at the Agricultural Research and Extension Trust to illustrate how to use specific alternatives.

Technical experts, policy makers, methyl bromide users, farmer organizations and extension workers from 20 countries in Africa and Europe attended the workshop. They identified specific activities required at regional and national levels to phase out methyl bromide and implement alternatives.

Africa is the second largest methyl-bromide-consuming region in the developing world, using around 5000 tonnes per year, mainly as a soil fumigant for high-value export crops such as tobacco, cut flowers and vegetables. Smaller amounts are used for protection of stored grain and other commodities.

**For more information on the above articles contact:**  
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 e-mail: [ozonaction@unep.fr](mailto:ozonaction@unep.fr),  
<http://www.unep.ie/org/ozonaction.html>

### *RUMBA: Regular Updates on Methyl Bromide Alternatives*

*RUMBA*, UNEP's new monthly e-mail update on alternatives to methyl bromide and on efforts to phase it out, is now available.

**Contact:** UNEP TIE,  
 e-mail: [methyl.bromide@unep.fr](mailto:methyl.bromide@unep.fr)  
 or telephone Jessica Forrest on +33 1 44 37 76 30

# SAVE O<sub>3</sub>UR SKY: be ozone friendly

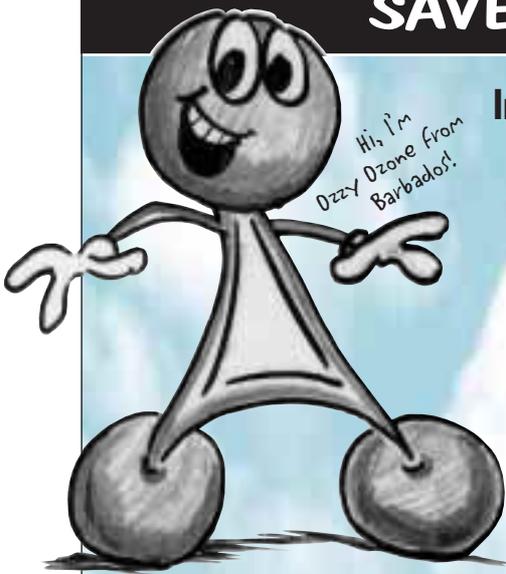
## International Day for Preservation of the Ozone Layer

16 September 1999

*On the occasion of the International Day for Preservation of the Ozone Layer, 16 September 1999, UNEP called on governments, industry and citizens to make a total commitment to ozone-friendly practices to ensure restoration of the ozone layer by 2050. The day was celebrated around the world by a variety of imaginative events, and was marked by statements from leading personalities. Our special two-page feature presents some of these.*

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Mr K. M. Sarma, Executive Secretary, Ozone Secretariat, <http://www.unep.org/ozone>



### Message from Dr Klaus Töpfer, Executive Director, UNEP

*"Whether or not the ozone layer recovers at the expected time will be determined by the joint efforts of governments as well as individuals. We have taken positive action and have signed agreements, but we also realize that our continued actions are pivotal to the healing of the ozone layer. We are fully aware of the dangers of a depleted ozone layer. There is no room for complacency."*

### Vietnam: conference, exhibition and awards

To mark the special ozone day, Vietnam organized an 'International Conference on Environment in Vietnam' which included a two-day seminar on stratospheric ozone and climate protection. Stratospheric Protection Awards were presented to government and industry.

### Niger: Environment Minister's message to young people

On the International Day for Preservation of the Ozone Layer, His Excellency, Mr Sèine Ali Gado, Niger's Minister of Environment, sent out the following message to the country's young people:

*"The ozone layer is vital for our health, for our food and for our environment, our survival depends on it. Dear children, please pass this message on to all of your friends, to your families and to all young people, so that we can work together to protect the ozone layer. We must be friends of the ozone layer."*

### Republic of Korea: ozone and climate protection conference

A "1999 Workshop on Ozone and Climate Protection" was organized. The workshop reviewed latest information on technology

developed in the Republic of Korea to protect the ozone layer and reduce emissions of greenhouse gases.

### Kuwait: discussion and outreach

A one-day seminar on *Ozone Friendly Air Conditioning* was held on 16 September, led by the Environment Public Authority (EPA), Kuwait Institutes for Scientific Research (KISR) and the American Society of Heating and Refrigeration and Air-conditioning (ASHRAE).

Other awareness-raising events included a press conference about the Day for Preservation of the Ozone Layer and dissemination of posters and brochures.

### Kenya: listening to the younger generation



Secondary school children from all over Kenya were invited to take part in an essay competition organized by the Kenyan Ministry of Education and Human Resources and Development, the Ministry of Environment and Natural Resources, and UNEP Communications and Public Information, and the Ozone Secretariat. More than 20,000 entries were received!

### El Salvador: video and technical exhibition for phase out

The National Ozone Unit of El Salvador (NOU) assisted in the production of a video containing statements from ministers of the environment in the region. The video was broadcast on television throughout the region.

The NOU also organized small workshops for the various sectors using ozone-depleting substances and participated in a technology exhibition organized by the Ministry of Environment and Natural Resources. The exhibition featured recovery and recycling equipment.

### Jamaica: protecting the ozone layer, in words and pictures

The Jamaican NOU organized activities including a feature in the *Daily Gleaner* national newspaper, and an exhibition of children's paintings displayed in two local libraries.

The Power 106 Independent Talk radio station also hosted a discussion on Jamaica's progress in phasing out ozone-depleting substances.



### Estonia: reviewing progress so far

The Estonian Ozone Protection Commission organized publication of an article from the Chamber of Commerce and Industry in major national newspapers, a special broadcast in Estonian and Russian, and a symposium reviewing progress so far in phase out of ozone-depleting substances.

### Nepal: publications for awareness

An 'ODS Bulletin' was published to disseminate information on 'how to be ozone friendly'. Press conferences were held and newspapers carried articles on protection of the ozone layer.

### Barbados: multi-media awareness raising

The Barbados Ministry of the Environment used the 16 September celebrations to introduce 'Ozzy Ozone' (pictured above) to increase public awareness, especially amongst children.

An article, contributed by the Ministry of the Environment and including suggestions for actions that individuals can take to be 'ozone friendly', was published in the *Daily Nation* newspaper.



## ... SAVE OUR SKY: be ozone friendly (continued)

### International Day for Preservation of the Ozone Layer, 16 September 1999

#### Cuba: exchanging views

The Ozone Unit in the Ministry of Science and Technology organized a meeting of all those responsible for phase-out projects in Cuba to allow them to update one another on the status of the implementation of projects. A small quiz contest for children was also held with prizes being given to the children who had most knowledge about the ozone layer.

#### Uruguay: real-time update on the ozone layer

A video conference from the scientific base in Artigas gave a real-time update on the state of the stratospheric ozone layer on 16 September. This event, together with TV, radio and press interviews explaining ozone problems,

was organized by Uruguay's National Direction of Environment (Ministry of Housing and the Environment). In the north of the country, an agro-industrial exhibit provided information on the use and effects of methyl bromide.

#### Argentina: a special resolution and meeting of scientific experts

Argentina's Minister of the Environment issued a Special Resolution declaring the International Day for Preservation of the Ozone Layer of environmental interest. To further mark the occasion, the country's Ozone Office organized a regional meeting of scientific experts to discuss the latest findings on the state of the ozone layer.

#### Peru: focusing on progress made so far

The Ozone Office, part of Peru's Ministry of Industry, Tourism, Integration and Commercial International Negotiations, organized a commemorative technical conference for Ozone Day. The conference focused on the progress made by the Ozone Office in phasing out ODS and heard a presentation from a company that had converted to new CFC-free technologies with assistance from the Multilateral Fund.

#### Guyana: television, newspapers and lectures to raise awareness

Television appearances by experts, discussion panels, newspaper articles, lectures and distribution of brochures to schools were

some of the awareness-raising activities organized by Guyana's Environment Protection Agency, in collaboration with the National Climate Change Committee.

#### Trinidad and Tobago: raising awareness

In Trinidad and Tobago, experts from the country's Environmental Management Authority (EMA) and UNDP answered questions about ozone depletion in a 'live' television phone-in organized by the EMA's ODS Sub-Unit. To further raise awareness, posters were supplied to enterprises for display in their offices and newspaper articles were published.

#### Uganda: consumers urged to be ozone friendly

The Ugandan Consumers' Protection Association issued a statement explaining the risks of ozone depletion and urging consumers to become ozone friendly.

#### Philippines: a rally for ozone recovery

More than 500 representatives from industry, local government, schools and youth groups participated in a 'Walk Rally for the Ozone Layer'. Colourful 'Save O<sub>3</sub>ur Sky: Be Ozone Friendly' T-shirts, hats and badges were distributed to participants.

#### Nicaragua: painting competition and technical writing

The Ozone Office in Nicaragua organized a painting competition for young people in the first three years of high school. The winning painting will be used as a logo for future national ozone awareness-raising campaigns. Car stickers, T-shirts and posters were also prepared and distributed and a technical article competition was organized by the Nicaraguan Institute of Geography.

#### Venezuela: Presidential support to fight illegal trade

A statement indicating the priorities established by Venezuela's President was issued by the country's Ozone Office. The main issues emphasized were the need for extra vigilance on CFC smuggling, use of obso-

lete CFC-using equipment and corruption among officials allowing illegal entry of CFCs.

#### Bulgaria: rocking our way to recovery

Bulgaria celebrated this year's Ozone Day with a rock concert in Sofia under the banner 'Let's Patch Up the Sky with Love'. The concert was the culmination of a five-month nationwide awareness-raising campaign.



#### Romania: policy coming into force

Introduction of a ban on the production of CFCs and halons in Romania coincided with the International Day for Preservation of the Ozone layer. A roundtable was organized by the Ministry of Water, Forests and Environmental Protection to discuss the new Romanian regulations and a public awareness campaign was organized with the help of the Romanian Orthodox Church.

#### China: 'Save the Sky' ceremony

A 'Save the Sky' ceremony, organized by SEPA's Programme Management Office, was organized on 16 September. Two UNEP posters translated into Chinese figured in the ceremony. China is soon to host the 11th Meeting of the Parties to the Montreal Protocol and so took the opportunity to publish newspaper articles and feature TV programmes about the Meeting.

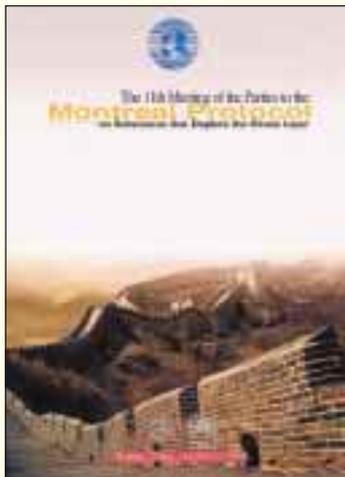
#### United States: President Clinton urges US Senate to ratify the Montreal Amendment

President Clinton chose the *International Day for Preservation of the Ozone Layer* to submit an Amendment to the Montreal Protocol to the Senate for its approval. Urging the Senate to ratify the amendment, the President said:

*"Preservation of the ozone layer is critical to life on Earth. I recommend that the Senate give early and favourable consideration to the 1997 Amendment to the Montreal Protocol and give its advice and consent to ratification."*



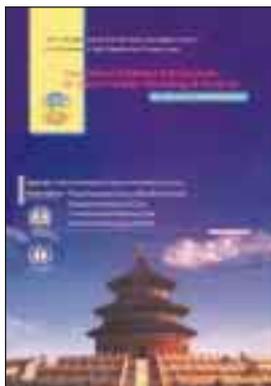
## 11<sup>th</sup> Meeting of the Parties to the Montreal Protocol



### Schedule of related meetings leading up to the Meeting of the Parties

|                         |  |
|-------------------------|--|
| 24–26 November:         | 29th Meeting of the Executive Committee  |
| 27 November:            | Meeting of the 23rd Implementation Committee under the Non-Compliance Procedure                      |
| 27 November:            | 2nd Meeting of the Bureau of the Fourth Conference of the Parties to the 10th Meeting of the Parties |
| 29 November–3 December: | 5th Meeting of the Conference of the Parties to the Vienna Convention                                |
| 29 November–3 December: | 11th Meeting of the Parties to the Montreal Protocol   |

### The International Exhibition on Ozone Friendly Technology and Products



The International Exhibition on Ozone Friendly Technology and Products, 29 November–3 December 1999, will provide an opportunity for companies, environmental organizations and research institutions from China and elsewhere to

demonstrate new ozone-friendly technology, equipment and products as well as providing a forum for exchange of views and experience.

**For more information, contact:**

Exhibition Organization Committee, CICCST/EX11MPMP,  
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tel: +86 10 62178877, ext. 3718 (3710),  
fax: +86 10 621 80142,  
<http://www.sepaiec.gov.cn/english/ozone>,  
e-mail: [ciefs@public3.bla.net.cn](mailto:ciefs@public3.bla.net.cn)  
Contact person: Lianhong Ma

The 11th Meeting of the Parties to the Montreal Protocol will be held in Beijing, China, 29 November–3 December 1999. A series of related meetings and an exhibition will take place during the period (see boxes above and left).

The 11th Meeting of the Parties will discuss a number of major issues. These include:

- **Proposed adjustments and amendments to the Montreal Protocol**
  - Amendments on production of hydrochlorofluorocarbons (HCFC) proposed by the European Union
  - Consumption and trade with non-Parties
  - New ozone-depleting substances
  - Continued production of CFCs for domestic use
- **Replenishment of the Multilateral Fund for the 2000–02 period**
- **Quarantine and pre-shipment (QPS) applications of methyl bromide**
  - Reductions in the blanket exemption on QPS
  - Capping QPS applications
  - Clarification of QPS applications

**For more information contact:**

UNEP Ozone Secretariat, P.O. Box 30552, Nairobi, Kenya,  
tel: +254 2 623 885, fax: +254 2 623 913,  
<http://www.unep.org/unep/secretar/ozone/home.htm>

### TEAP HFC and PFC Task Force report now available

The latest report from the HFC and PFC Task Force of the Technology and Economic Assessment Panel (TEAP), published in October 1999, is now available from the Secretariat and on the TEAP and UNEP websites. The report,

entitled *The Implications to the Montreal Protocol of the Inclusion of HFCs and PFCs in the Kyoto Protocol*, explains how the Montreal and Kyoto Protocols are scientifically, technically and financially interconnected and indicates how their

careful implementation can ensure that they do not interfere with one another. Twenty-eight experts from 17 countries participate in the Task Force.

Contact: <http://www.teap.org>

## The National Ozone Unit Interview

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

### Mr Atul Bagai



**Director, Ozone Cell  
Ministry of Environment  
and Forests, India**

*As the person in charge of the National Ozone Unit of a large country that both consumes and produces a significant amount of ODS, what have been your major achievements in the last two years?*

India has successfully met the first of its freeze commitments on the production and consumption of CFCs, scheduled for July 1999. This was achieved by controlling both consumption and growth in the rate of production of CFCs. We have also successfully formulated our project for gradual phase out of CFC production, to be submitted to the 29th ExCom for approval. Raising awareness amongst school children, NGOs and other stakeholders has also been a very significant achievement.

*India is being indicated as a possible source of illegal trade. What steps are being taken to prevent such trade?*

India has never been a source for illegal trade. The country has introduced a series of proactive regulatory measures to facilitate legal movement of ODS. Trade in ODS with non-Parties to the Protocol and exporting of CFCs to non-Article-5 countries have been banned. The harmonized classification of commodity codes, consistent with the international system, has been introduced. Import and export of Annex A and B substances, controlled under the Protocol, have been brought under licensing. We also intend to organize capacity-building training modules for custom officials in the year 2000–01, with the assistance of UNEP TIE.

*How do you propose to face the challenge of phasing out ODS in the large SME and service sectors?*

SMEs remain one of the biggest challenges for India. A few demonstration projects are being implemented and closely monitored to draw lessons and valuable experience for tackling this sector. India is working closely with UNEP to draw up a strategy to address SME issues. It is increasingly clear that non-investment projects will play a very important role in phasing out ODS consumption in this sector. In the service sector, a wide variety of approaches is being tried with the assistance of bilaterals, NGOs and national level research institutions. Our aim is to develop models which can be replicated on a country-wide scale.

*India is a large country with many languages and varied educational levels among technicians using ODS. How do you manage your awareness and information campaign to ensure that a large part of the population can be educated about the ozone issue?*

Awareness raising and information dissemination to the large number of consumers and stakeholders, especially the thousands of technicians in the service sector, is a major challenge. Apart from employing normal channels of communication, through workshops, seminars, publicity material, etc., NGOs are being used at the regional level to interact with the stakeholders in an idiom that is understandable to them. Newspaper advertisements in regional languages in the regional press, and printing of training manuals in regional dialects are other popular methods of reaching out to an audience with different educational and language backgrounds.

## Status of Ratification

(as at 31 October 1999)

### The Vienna Convention

173 Parties; 4 new Parties:\* Albania, Armenia, Djibouti, Oman

### The Montreal Protocol

172 Parties; 4 new Parties:\* Albania, Armenia, Djibouti, Oman

### The London Amendment

136 Parties; 7 new Parties:\* Djibouti, Guyana, Democratic People's Republic of Korea, Oman, St Lucia, Solomon Islands, Trinidad and Tobago

### The Copenhagen Amendment

101 Parties; 10 new Parties:\* Djibouti, Guyana, Democratic People's Republic of Korea, Monaco, Nicaragua, Oman, St Lucia, Senegal, Solomon Islands, Trinidad and Tobago

### The Montreal Amendment

26 Parties; 12 new Parties:\* Djibouti, Guyana, Hungary, Niger, St Lucia, Senegal, Solomon Islands, Sri Lanka, Sweden, The Former Yugoslav Republic of Macedonia, Trinidad and Tobago, Tunisia

*The Montreal Amendment came into force on 10 November 1999.*

\*since the last issue of the *OzonAction Newsletter*

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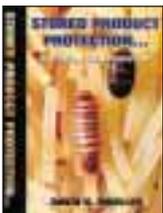
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## New publications



Top left: *Stored Product Protection ... a Period of Transition*. Insects Ltd. Inc, 1999.

Top right: *Methyl Bromide Phase-out Strategies: a Global Compilation of Laws and Regulations*. UNEP TIE, OzonAction Programme, 1999.



Bottom left: *Arctic Ozone: The Sensitivity of the Ozone Layer to Chemical Depletion and Climate Change*. Environment Canada, 1998.

Bottom right: *UK Transition Strategy for CFC-based MDIs*. Department of the Environment, Transport and Regions, UK, 1999.