

Ozone treaty 'must tackle CFC smuggling'

JOHN MOORE/AP

[MONTREAL] Representatives of more than a hundred signatory countries to the Montreal Protocol on Substances that Deplete the Ozone Layer gathered in Montreal this week to celebrate the signing of the protocol exactly 10 years ago, and to consider ways of strengthening it.

As in previous annual meetings, there are likely to be measures to accelerate the phase-out of ozone-depleting substances, and this week measures to discourage illegal trade in chlorofluorocarbons (CFCs) will be high on the agenda. Exemptions for what are considered essential uses for certain chemicals will also again be considered.

Virtually all production and import of CFCs has been banned in the United States and other signatory countries, but sales are not illegal. As a result, smuggling of the chemicals into the United States from developing countries, where production is still allowed, has become big business, with huge profits to be made.

From 1994 to 1996, an estimated 10,000 tonnes were smuggled into Florida, where its street value is thought to be not much lower than that of cocaine. On the Mexican border, a CFC-containing coolant was reported last November to be second only to marijuana in the value of contraband seizures.

Black-market demand is high because owners of older vehicles are unwilling to pay the much higher price for substitutes that can be used in air-conditioning. A 12-ounce container of CFC-containing coolant sells for US\$2 in Mexico and \$23 in California.

Thomas Watts-Fitzgerald, a US attorney involved in a programme to stop CFC imports, says that while converting cocaine to crack and selling it brings a fourfold profit, the sale of a canister of Freon, a DuPont brand-name coolant, can bring a 13-fold profit.

Signatories of the Montreal Protocol are now being asked by the Environmental Investigation Agency, a conservation trust based in London and Washington, to adopt a licensing system that could track all CFC imports and a ban on unlicensed imports and exports of controlled substances.

The Montreal Protocol was signed by 24 countries on 16 September 1987, and has 163 signatories. According to its Web page (www.ec.gc.ca/MontrealProtocol), the protocol is "the first international mechanism designed to address an arising global environmental problem".

The theory that CFCs — then used in refrigeration, aerosol cans and some industrial processes — were implicated in destruction of the ozone layer was first proposed by two University of California scientists, Sherwood Rowland and Mario Molina, in the 1970s.

In 1977, the United Nations Environment Programme (UNEP) established a



Leakage? Illegal trade in legally produced CFCs, here being bottled in India, offers huge profits.

Coordinating Committee on the Ozone Layer and adopted a World Plan of Action. In the late 1970s and early 1980s, the United States, Canada and other countries banned CFCs as aerosol propellants for non-essential uses, reducing CFC consumption in Canada's case by more than 50 per cent.

In 1985, Canada became the first signatory of the Vienna Convention on the Protection of the Ozone Layer, which two-and-a-half years later became the Montreal Protocol. The protocol came into effect on 1 January 1989. Signatories agreed to freeze consumption of CFCs and halons at 1986 levels, and then to reduce consumption by 50 per cent within 10 years. Developing countries were given a grace period of 10 years.

Since then, adjustments have been made to the scope and stringency of the controls, and further substances, such as carbon tetra-

chloride, methyl chloroform, HCFCs, HFCs, and methyl bromide, have been added to the regulated list. One result has been a dramatic lowering of the use of CFCs and halons: by 90 per cent in OECD countries between 1986 and 1994.

Accelerated phase-out of methyl bromide for industrial countries — it is used as a pesticide in agrifood businesses worldwide — will be under discussion at the Montreal meeting. Molecule-for-molecule, methyl bromide is considered at least 50 times more destructive to the ozone layer than chlorine from CFCs.

Also due to be discussed is a phase-out schedule for developing countries and exemptions for the chemical where there are no technically or economically feasible alternatives. Delegates will debate whether and how to disallow trade in the substance with countries that are not parties to the protocol.

A conference of environmental non-governmental organizations (NGOs) is being held in conjunction with the main meeting, with speakers and panels on an ozone recovery plan and assessments of the performance of the protocol. There is also a Virtual Environmental NGO Conference at www.intranet.ca/~foe/.

The Canadian federal government and UNEP will present awards at an anniversary ceremony. Canada's leading role in the adoption of the protocol is just one factor in this country's interest in ozone depletion. A recent scientific survey from its scientists points out that ozone thinning continues over Canada. "In the high Arctic, severe and unexpected losses of up to 45 per cent have occurred in the springtime," the report says. "UV [ultraviolet] levels are expected to remain higher than normal for 30–40 years." **David Spurgeon**

'Surprising success' of the Montreal Protocol

[MONTREAL] One of the first scientists to have pointed out in the mid-1970s the potential threat to the atmosphere of CFCs said last week that he had been both surprised and impressed by the success of the Montreal Protocol in restricting their emissions.

"It was frustrating for many years, but it really paid off with the protocol, which was a marvellous example of what the international community can do working together," said Mario Molina of the Massachusetts Institute of Technology, who with Sherwood Rowland was co-author of the research paper

published in 1974 that first drew attention to the problem.

"We can see from the atmospheric measurements that it is already working," Molina said in Montreal last week, where he was at a meeting to mark the tenth anniversary of the protocol. "It has imperfections, but the fact is that we have already found that the concentration of chlorine getting into the stratosphere has levelled off and is starting to decrease."

Molina says that, in hindsight, it is always possible to find better ways of doing things. "But I am still amazed that the protocol

worked; for many years I thought that it was hopeless — how were we going to get industry and the different governments in developing countries to agree to stop this? What I think helped was on the one hand the very clear scientific evidence and on the other the very clever diplomatic negotiations."

In terms of the science, Molina says that it was a "very small community" that dealt with this issue. "One very important component is capacity building — we need to have more scientists in the developing world working on these issues." **D.S.**