

# London ozone meeting wins some hearts

- 20 new signatories for Montreal
- India and China demur

## London

The London conference on the ozone layer had preached successfully to the converted when it finished on Tuesday this week, but both China and India left muttering that they would seek amendments to the Montreal Protocol at the meeting planned for Helsinki in May.

The conference, organized by the British government and attended by 124 others, was largely an exercise in persuasion. By the time it opened, the European Community, followed by the United States and Canada, had all agreed completely to phase out by 2000 the production and consumption of the materials covered by the Montreal Protocol.

The protocol requires a 50 per cent reduction by 2000 of 5 named chlorofluorocarbons (CFCs) and 3 halons. The European Community seems to have surprised itself by its members' willingness to bring forward a complete ban. They may now seek to amend the protocol in May.

The fear now among the industrialized nations is that their attempts to halt the depletion of the ozone layer will be negated by the potentially huge increases of emissions of the restricted materials from developing countries.

Mrs Thatcher, the British Prime Minister, put the point directly when she told the conference that the actions of the developed world alone will not be enough, and said that the consequences of ozone depletion do not affect only those whose products do the most damage.

President Daniel Arap Moi of Kenya, the chairman of the opening session, put forward the poorer countries' view by saying that many developing countries are only now embarking on the large-scale use of refrigeration, air-conditioning, plastics and electronic manufacturing in which the ozone-depleting chemicals are used. He said that industrialized countries would have to help them leap-frog the CFC era, and that industrialized countries should be prepared to make sacrifices commensurate with those now being asked of developing countries.

Even so, 20 countries announced at the conference that they would sign the protocol, bringing the number of signatories to 59. (Only 32 have so far ratified the protocol.) It is especially significant that Brazil, one of the most rapidly industrializing of the developing countries, should have agreed to sign, which directed the attention of the conference to India and China.

Z.R. Ansari, the Indian Minister for

Environment and Forests, and Lui Ming Pu, of the Chinese commission for environmental protection, both spoke in similar terms, complaining that the restrictions placed on developing countries by the protocol are too severe, and that the provisions for technical assistance should be spelled out in more detail.

Both representatives said their governments would be willing to sign the protocol if a fund were set up by industrialized countries to support research and development leading to alternative materials, and if the outcome were transferred to developing countries free of charge. But China will be represented at Helsinki to explore amendments of the existing protocol.

Others may then be reluctant to see the protocol along the lines now accepted by the European Community, the United States and Canada. Thus Vladimir Zakharov, deputy chairman of the state committee of the Soviet Union for hydrometeorology, said that more scientific evidence is needed before tighter restrictions are imposed.

But the European Community is already pressing to go further than the position agreed at its meeting last week, on the eve of the London conference. Environment Commissioner Ripa di Meana said that the aim should be a complete phase-out of CFCs and halons by 1996-97. Mr Nicholas Ridley, Britain's Secretary of State for the Environment, and Klaus Toepfer, his counterpart from West Germany, said they would support such a move. US Senator Albert Gore (Democrat, Tennessee) is also in favour of a tighter 4-5 year deadline.

Robert Watson, from the US National Aeronautics and Space administration, would go further. He told the conference that when the protocol is amended, not only should the deadline be tighter but that there should also be a ban on the emission of carbon tetrachloride as well as tight restrictions on methyl chloroform.

Representatives of industry are rattled by the prospect of repeated changes of legislation which affects their business. They say that while a phase-out by 2000 is feasible, further changes could impede the development of substitutes. Archie Dunham, a vice-president of E.I. du Pont de Nemours, said that without a secure knowledge that there will be a long-term market for potential substitutes, the phase-out of chemicals now in use will be delayed.

Christine McGourty

## CFC SUBSTITUTES

# Electronics industry in front line

## Santa Clara, California

REPRESENTATIVES of the US electronics industry, faced with the prospect of an enforced phase-out of the CFC solvents used as cleaning and drying agents in manufacturing, met CFC producers last week in Santa Clara to try to speed up the search for alternatives.

While the use of CFCs in aerosol propellants and refrigeration has been given most attention in the assessments of the threat to stratospheric ozone, attention has only more recently focused on CFC-113, a solvent used in more than 100 specialized applications in electronics manufacturing. Not only has the electronics industry started late in the race to develop alternatives, but it is unlikely that one or even several substitutes will be adequate replacements in all applications.

The electronics industry seems nevertheless reconciled to a complete ban on CFC use by 2000. The US administration, which has been reluctant to call for measures going beyond the 50 per cent reduction specified in the 1987 Montreal Protocol, lined up with the European Community at the weekend in recommending a complete phase-out by 2000 (see left).

If the recommendation is not formally endorsed by the signatories of the protocol at the meeting planned for Helsinki in May, the US Congress could decide to act unilaterally on behalf of the United States.

While most industry representatives at the conference here accepted that a CFC phase-out is necessary to minimize ozone destruction, they fear that the regulatory axe will fall before they have safe economical substitutes in place. Hasty decisions on replacements, they say, could themselves create problems in the future, should the new chemicals prove toxic or otherwise hazardous, for example.

A unilateral ban would in any case be no more than a 'band-aid', according to David Chittick, vice-president for environment and safety engineering at AT&T, who said that such a ban would penalize US companies economically while doing little to save the ozone.

Some CFC suppliers with CFC-113 replacements to describe at the meeting complained that the electronics industry is reluctant to consider alternatives that will require costly changes in equipment and manufacturing processes, and seems rather to be waiting for a 'magic liquid' that can be used in a fashion identical with that of existing products.

But this week both du Pont de Nemours and the British company ICI announced the development of alternatives to CFC-113, and AT&T says it has developed a cleaning method that eliminates the need for CFC-113.

Marcia Barinaga