

COMMISSION OF THE EUROPEAN COMMUNITIES

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COMMUNICATION FROM THE COMMISSION TO THE COUNCIL

The Participation of the European Community and Member States in the Negotiation of Adjustments and Amendments to the Montreal Protocol during the 6th Open-Ended Working Group of the Parties, Nairobi, Kenya, 6-15 April 1992.

EXPLANATORY MEMORANDUM

1. Article 9 of the Vienna Convention for the Protection of the Ozone Layer allows the Montreal Protocol on Substances that Deplete the Ozone Layer to be amended to accommodate new scientific information on the extent of ozone depletion, and on the basis of technical developments.
2. Adjustment of the Protocol's control measures is a separate matter. Article 2 of the Protocol allows adjustments to be made to production and consumption reduction schedules, and to the ozone depletion potential of substances already under control. However, adjustment must be based on a review process which involves the formation of expert panels to assess scientific, environmental, technical and economic developments. A timescale for this procedure is foreseen under Article 6 of the Protocol. The last adjustment to the Protocol's control measures was made during the Second Meeting of the Parties in London in 1990.
3. The next meeting of the Protocol Parties will take place in Copenhagen, Denmark in November of this year and the Open-Ended Working Group of the Parties will prepare the negotiation for this meeting. Proposals for adjustments and amendments to the Protocol must be notified to all Parties six months in advance. Consequently the Community will need to develop a position on the key issues of the negotiation before the Sixth Meeting of the Open-Ended Working Group in April otherwise it risks being committed to a Protocol course of action that it may disagree with.
4. The United Nations Environment Programme (UNEP) Scientific Assessment Panel reports that the Antarctic ozone hole in 1991 was as deep and extensive in area as those of 1987, 1989 and 1990. For the first time observations in Antarctica confirm that loss of ozone coincides with increased surface ultraviolet radiation. Furthermore, the stratospheric ozone layer is being depleted faster than expected and ozone losses are now occurring over densely populated Northern mid-latitudes. At latitude 45°N during December to March the TOMS satellite instrument measured ozone loss at $-5.6\% \pm 3.5\%$ per decade over the period 1979 to 1991. The amount of chlorine in the stratosphere is expected to increase from 3.3 ppbv (parts per billion volume) at present to 4.1 ppbv by the year 2000. This will occur even with the implementation of the revised (London, 1990) Protocol by all Parties.
5. The UNEP Technology and Economic Assessment Panel conclude that it is technically feasible to phase-out ozone depleting substances earlier than required in the revised (London, 1990) Protocol. In developed countries virtually all consumption of CFCs and halons could be eliminated by 1995-1997, 1,1,1-trichloroethane as early as 1995 and no later than 2000, and carbon tetrachloride in the vast majority of applications by 1995 with final phase-out by 1997.
6. On the basis of the scientific and technical evidence from the UNEP assessment process Directorate-General XI submits a Draft Communication for approval by the Commission. The Draft Communication requests the Council to approve a Community position for the acceleration of the reduction schedules for controlled substances under the Montreal Protocol. It also asks the Council to approve the concept of a quantitative limit on consumption of transitional substances combined with certain limitations on their use, as the most appropriate way of implementing the London Resolution on transitional substances under the Montreal Protocol and within the European Community.

1. INTRODUCTION

1. Article 9 of the Vienna Convention for the Protection of the Ozone Layer allows the Montreal Protocol on Substances that Deplete the Ozone Layer to be amended to accommodate new scientific information on the extent of ozone depletion, and on the basis of technical developments. However, such amendments are only binding on Parties who ratify them.
2. Adjustment of the Protocol's control measures is a separate issue. Article 6 of the Protocol establishes a timescale and procedure for a review process which involves the formation of expert panels to assess scientific, environmental, technical and economic developments. Article 2 permits adjustments to be made to production and consumption reduction schedules, and to the ozone depletion potential of substances already under control. Furthermore, Articles 2A and 2D of the revised (London, 1990) Protocol specifically state that the control measures for Annex A CFCs and 1,1,1-trichloroethane shall be reviewed in 1992 to determine the feasibility of accelerating the reduction schedules for these substances. Adjustments are adopted by a decision of the Parties and are binding on all Parties.
3. Decision 11/13 adopted by the Second Meeting of the Protocol Parties in London 1990 requested:
 - A. The Technology Review Panel to, among other things:
 - assess the earliest technically feasible dates and the costs for reduction and total phase-out of 1,1,1-trichloroethane;
 - evaluate the need for transitional substances in specific applications;
 - analyse the quantity of controlled substances required by Parties operating under Article 5 paragraph 1 (developing countries);
 - compare the toxicity, flammability, energy efficiency and other environmental and safety considerations of chemical substitutes, along with an analysis of their likely availability for medical uses.
 - B. The Scientific Assessment Panel to, among other things:
 - evaluate the ozone depletion potential (ODP) and global warming potential (GWP) of hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs)⁽¹⁾;
 - evaluate the ODP of "other halons";
 - analyse the impact on the ozone layer of the adjusted control measures.

(1) HCFCs and HFCs contain hydrogen in their structure which means that unlike chlorofluorocarbons (CFCs), they are more reactive. Consequently they have shorter atmospheric lifetimes and are largely removed in the troposphere. HFCs do not contain chlorine and therefore do not destroy ozone. HCFCs are defined as transitional substances under Annex C of the revised (London, 1990) Protocol.

4. Parties to the Protocol, including the European Community, adopted a Resolution on Transitional Substances as part of the revised (London, 1990) Protocol. This Resolution was intended to facilitate the adoption of HCFCs and their timely substitution by other non-ozone depleting and more environmentally suitable alternative substances or technologies. It was also foreseen that the use of transitional substances would be regularly reviewed and that they would be phased-out if possible by 2020 and no later than 2040.
5. The 1990 mandate to the Technology Review Panel and the Scientific Assessment Panel was revised by the Third Meeting of the Protocol Parties in Nairobi 1991. Decision III/12 asks the Assessment Panels, especially the Technology and Economic Assessment Panel⁽²⁾ to, among other things:
 - assess the implications of a 1997 phase-out of controlled substances⁽³⁾ especially for developing countries;
 - taking into account the London Resolution to identify specific areas where transitional substances are required to facilitate the earliest possible phase-out of controlled substances, and the quantities likely to be needed;
 - identify transitional substances with the lowest ODPs required for specific areas and to suggest if possible a technically and economically feasible timetable, indicating associated costs, for the elimination of transitional substances.
6. In the eventuality that the Assessment Panels would suggest a need to adjust or amend the Protocol, Decision III/11 requests the Open-Ended Working Group of the Parties⁽⁴⁾ to make recommendations in time for the Fourth Meeting of the Protocol Parties in November 1992 in Copenhagen. Article 2 requires adjustments to be notified to Parties six months in advance. Article 9 of the Vienna Convention makes the same stipulation for amendments. Consequently the Community will need to develop a position before the Sixth Meeting of the Open-Ended Working Group in April otherwise it risks being committed to a Protocol course of action that it may disagree with.

II. OUTCOME OF THE UNEP ASSESSMENT PROCESS

7. Since the last major international assessment 2 years ago in 1989 new knowledge has been obtained on the impact of human activities on the ozone layer. Specifically the Scientific Assessment Panel reports:
 - the Antarctic ozone hole in 1991 was as deep and extensive in area as those of 1987, 1989 and 1990. Observations in Antarctica

(2) For the 1991 assessment the Technology Review Panel and the Panel for Economic Assessment were amalgamated to become the Technology and Economic Assessment Panel.

(3) The term "controlled substances" refers to CFCs, other fully halogenated CFCs, halons, carbon tetrachloride and 1,1,1-trichloroethane as listed in Annexes A and B of the revised (London, 1990) Protocol. It excludes transitional substances (HCFCs).

(4) Essentially the Open-Ended Working Group of the Parties to the Montreal Protocol prepares the negotiation for the Protocol Meeting.

confirm that loss of ozone coincides with increased surface ultraviolet radiation. No comparable ozone losses have been observed in the Arctic but localised ozone losses have been observed in winter;

- ground based and satellite observations show that total column ozone decreases significantly in winter in the Northern hemisphere. At latitude 45°N during December to March the TOMS satellite instrument measures ozone loss at $-5.6\% \pm 3.5\%$ per decade over the period 1979 to 1991. For the first time, after allowing for known natural variability, there is evidence of significant decreases in spring and summer in both the Northern and Southern hemispheres at middle and high latitudes, but not in the tropics;
- the Antarctic ozone hole and the observed middle and high latitude ozone losses are largely due to chlorine and bromine containing chemicals. As atmospheric abundances of these chemicals increase in the future, significant additional losses of ozone are expected at middle latitudes and in the Arctic.

8. In view of the observations made under paragraph 7 the Scientific Assessment Panel notes that:

- stratospheric chlorine loading (3.3–3.5 parts per billion volume [ppbv]) is expected to increase in the near future reaching a peak of 4.1 ppbv by 2000. This will occur even with the implementation of the revised (London, 1990) Protocol by all Parties. Reducing ozone loss requires further limitations on emission of chlorine and bromine containing compounds;
- a significant reduction in peak chlorine loading can be achieved by accelerating the phase-out schedules for CFCs, carbon tetrachloride and 1,1,1-trichloroethane;
- a 3 year acceleration of the phase-out schedule for halons would reduce peak bromine loading by about 1 parts per trillion volume (pptv).

9. The Technology and Economic Assessment Panel concludes that:

- in developed countries, it is technically feasible to phase-out virtually all consumption⁽⁵⁾ of CFCs and halons by 1995–1997, 1,1,1-trichloroethane as early as 1995 and no later than 2000, and carbon tetrachloride in the vast majority of applications by 1995 with final phase-out by 1997;
- accelerated phase-out schedules are dependent on the acceptability and commercial availability of HCFCs and HFCs;
- with adequate financing and technical assistance to developing countries, use of ozone depleting substances can be phased-out in non-medical aerosol products, electronics manufacturing, and flexible and non-insulating foam by 1992–1995. It is feasible for developing countries to phase-out consumption of all controlled substances 5 to 8 years after developed countries;

(5) This refers to the Protocol definition of consumption which is production plus imports minus exports of controlled substances.

- the commercial availability of substitutes for some small but important uses of controlled substances is uncertain. Such uses include oral inhalant drug products, precision cleaning and drying of high technology products. In the future this may require exemptions for essential use.

III. ELEMENTS FOR THE COMMUNITY POSITION

10. The UNEP assessment panel process synthesises the views and expertise of literally hundreds of scientists, technicians and specialists throughout the world who are acknowledged experts in their fields. The panel reports are the most up to date review on the extent and effects of ozone depletion, and of the technical progress made in finding safe alternatives to ozone depleting substances. Two overriding conclusions may be drawn from this work. First, **observed ozone losses are worse than predicted** and the depletion now occurring over densely populated northern mid-latitudes will intensify. Second, it is technically feasible to phase-out ozone depleting substances earlier than required in the revised (London, 1990) Protocol.
11. Any desire to adjust the Protocol's reduction schedules needs to be set against the administrative and legal timeframe required for adjustments to be proposed, negotiated, agreed and implemented. When such factors are taken into consideration it is clear that the Fourth Meeting of the Protocol Parties in Copenhagen in 1992 will be the last opportunity for the European Community to convince other Parties to effect substantial alterations to the reduction schedules. If this is not achieved in 1992 then the next opportunity to effect adjustment will be towards the end of 1994 which means that national legislatures will be unlikely to implement the adjustments in domestic regulations until 1995.
12. Between 1986 and 1991 (6 year period) the **estimated** worldwide production of CFCs 11, 12, 113, 114 and 115 (categorised as Group I CFCs, see Annex) has declined by 40%. Similar trends may be observed for the European Community. Over a **five year** period from 1986 to 1990 the **actual** production of Group I CFCs in the Community has fallen by 36%, and **actual** production of halons 1211, 1301 and 2402 decreased by 16%. **Actual** consumption of Group I CFCs also fell by 41%, but consumption of halons rose by 9% in relation to the 1986 base year. These statistics demonstrate that industry and consumers have reacted more quickly than anticipated, in advance of the intermediate steps specified in both the Protocol and Regulation 594/91/EEC (see Annex), to reduce their dependence on CFCs and halons. Some multinational companies intend to phase-out their consumption of ozone depleting substances worldwide well in advance of the most progressive regulations. Furthermore, several Parties to the Protocol, including EC Member States, have already introduced national legislation which goes far beyond the requirements of international and Community law.

13. A stringent acceleration of the reduction schedules to force a more rapid move away from controlled substances will require the commercial availability of HCFCs and HFCs and perhaps some provision for essential uses. The concept of "essential use" already exists in the Montreal Protocol. Article 2B requires Parties to identify essential uses for halons by 1 January 1993. In Community legislation Articles 10 and 11 of Regulation 594/91/EEC allow for production and consumption of CFCs, other CFCs, halons and carbon tetrachloride for a limited period of time after their respective phase-out dates. However, the idea of essentiality has not yet been defined in practical terms. This will require the development of criteria to identify uses which will disappear when a controlled substance is phased-out because no substitutes are available.
14. During the Second Meeting of the Protocol Parties in London 1990, it was hoped that a phase-out of CFCs in advance of the Protocol's reduction schedules would be encouraged by the widespread availability of alternatives including HCFCs. A Resolution on transitional substances was adopted which established a set of guidelines for use of HCFCs (see paragraph 4). At the time Parties believed that avoiding regulation of HCFCs would encourage investments in the development, toxicity testing, production and use of transitional substances. To-day there are indications that industry would welcome a tightening of the intermediate steps in the Protocol's reduction schedules. Attitudes have changed and consequently regulatory certainty for transitional substances is a prerequisite to facilitate more investment in HCFCs and to achieve an even faster phase-out of CFCs.
15. Industries producing and using ozone depleting substances in the European Community made a proposal to the Commission of the European Communities, through the Industrial Group on the Protection of the Ozone Layer (IGPOL), for the regulation of transitional substances. This proposal advocated placing a quantitative limit (cap) on the amount of HCFCs placed on the Community market. After a period of use transitional substances would be phased-out when the availability and acceptability of substitutes could be better predicted. The European Commission established a small working group⁽⁶⁾ comprising Member States experts, industry representatives and Commission officials, to determine how the London Resolution could be best implemented under the Montreal Protocol and in the European Community. The group recommended that a cap on consumption accompanied by a list of uses of transitional substances should be adopted (see Annex). It has not yet been decided whether the list of uses should be a positive or a negative list.
16. Finally, it is worth recalling that the United Nations Conference on Environment and Development (UNCED) will be held in Rio de Janeiro, Brazil, in June of this year. It is the Community's intention to adopt a proactive role in this forum to bring about a better global environment. The Commission's Communication takes account of the UNCED objectives to prevent stratospheric ozone depletion. Furthermore, the proposals in the Communication are consistent with the "precautionary principle" which is foreseen by the Earth Charter or Rio de Janeiro Declaration on Environment and Development. This Charter was endorsed by the December 1991 Environment Council (see document 10339/91).

(6) The Working Group on Implementation of the London Resolution on Transitional Substances.

17. Taking into consideration:

- the accelerated deterioration of the stratospheric ozone layer according to the findings of the Scientific Assessment Panel.
- that it is technically feasible to phase-out ozone depleting substances by 1995 according to the findings of the Technology and Economic Assessment Panel.
- that this will be the last opportunity for the European Community to convince other Parties to bring about a substantial acceleration of the reduction schedules.
- that production and consumption of CFCs in the European Community and worldwide is declining more rapidly than expected.
- that it is necessary to secure investment in transitional substances in the industry sector.

18. Recommendation:

The Commission recommends that the Council decides;

- the Community participates within the framework of the work of the Open-Ended Working Group of the Parties to the Montreal Protocol, in the negotiations relating to the adjustments or amendments of this Protocol, which will be submitted to the Fourth Meeting of the Parties to the Montreal Protocol;
- the Commission conducts these negotiations in line with the negotiating directives below and with those set out in the Annex.

Negotiating Directives

1. The Commission ensures consistency between the provisions of the draft revision of the Protocol and the pertinent Community legislation and with Community objectives on environmental matters and the internal market.
2. The Commission ensures that the draft revised Protocol includes appropriate provisions allowing the Community to become a contracting Party.
3. The Commission will report, if necessary, to the Council on the progress of the negotiation to allow the Council to take a final position before the conclusion of the work.

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1. Adjustments to Reduction Schedules for Production and Consumption

*The following reduction schedules for production and consumption
should be introduced into the Montreal Protocol*

<i>Substance (grouped on basis of Regulation 594/91/EEC)</i>	<i>Commission Proposal</i>	<i>Existing EC Regulation (594/91/EEC)</i>	<i>Existing Protocol (revised London, 1990)</i>
<p><i>Group I</i></p> <p><i>CFCs</i></p>	<p>85% cut by 1/1/1994</p> <p>100% cut by 1/1/1996* Base year 1986</p>	<p>50% cut by 1/1/1993</p> <p>67.5% cut by 1/1/1995</p> <p>85% cut by 1/1/1996</p> <p>92.5% cut by 1/1/1997</p> <p>100% cut by 1/7/1997 Base year 1986</p>	<p>Freeze by 1/7/1991</p> <p>50% cut by 1/1/1995</p> <p>85% cut by 1/1/1997</p> <p>100% cut by 1/1/2000 Base year 1986</p>
<p><i>Group II</i></p> <p><i>Other fully halogenated CFCs</i></p>	<p>85% cut by 1/1/1994</p> <p>100% cut by 1/1/1996* Base year 1989</p>	<p>50% cut by 1/1/1992</p> <p>67.5% cut by 1/1/1995</p> <p>85% cut by 1/1/1996</p> <p>92.5% cut by 1/1/1997</p> <p>100% cut by 1/7/1997 Base year 1989</p>	<p>20% cut by 1/1/1993</p> <p>85% cut by 1/1/1997</p> <p>100% cut by 1/1/2000 Base year 1989</p>
<p><i>Group III</i></p> <p><i>Halons</i></p>	<p>85% cut by 1/1/1994</p> <p>100% cut by 1/1/1996* Base year 1986</p>	<p>Freeze by 1/1/1992</p> <p>50% cut by 1/1/1995</p> <p>100% cut by 1/1/2000 Base year 1986</p>	<p>Freeze by 1/1/1992</p> <p>50% cut by 1/1/1995</p> <p>100% cut by 1/1/2000 Base year 1986</p>
<p><i>Group IV</i></p> <p><i>Carbon tetrachloride</i></p>	<p>85% cut by 1/1/1994</p> <p>100% cut by 1/1/1996* Base year 1989</p>	<p>50% cut by 1/1/1992</p> <p>85% cut by 1/1/1995</p> <p>100% cut by 1/1/1998 Base year 1989</p>	<p>85% cut by 1/1/1995</p> <p>100% cut by 1/1/2000 Base year 1989</p>
<p><i>Group V</i></p> <p><i>1,1,1-trichloroethane</i></p>	<p>85% cut by 1/1/1994</p> <p>100% cut by 1/1/1996* Base year 1989</p>	<p>Freeze by 1/1/1992</p> <p>30% cut by 1/1/1995</p> <p>70% cut by 1/1/2000</p> <p>100% cut by 1/1/2005 Base year 1989</p>	<p>Freeze by 1/1/1993</p> <p>30% cut by 1/1/1995</p> <p>70% cut by 1/1/2000</p> <p>100% cut by 1/1/2005 Base year 1989</p>

* Indicates possible temporary exemption for essential use.

II. Transitional Substances under the Montreal Protocol

The following system of control for transitional substances should be introduced into the Montreal Protocol

1. A quantitative limit (cap) should be placed on the amount of transitional substances consumed.
2. The cap should be measured in ODP-tonnes⁽⁷⁾ and applied to all HCFCs and hydrobromofluorocarbons (HBFCs)⁽⁸⁾.
3. The level of the cap should be fixed as a percentage of the quantity of CFCs, measured in ODP-tonnes, consumed in a base year plus the existing HCFCs and HBFCs already placed on the market in that year.
4. The cap should be followed by a phase-out of HCFCs. The date for this should be determined when uncertainties about the availability and acceptability of alternatives have been overcome.
5. A positive or negative list of uses of transitional substances should be an addition to a cap on consumption.

(7) The ozone depletion potentials are estimates based on existing knowledge and will be reviewed and revised periodically.

(8) HBFCs are similar to HCFCs but contain bromine in their structure instead of chlorine. They are not yet defined as transitional substances under the Montreal Protocol.