

THIRTEENTH MEETING OF THE PARTIES TO  
THE MONTREAL PROTOCOL ON  
SUBSTANCES THAT DEplete  
THE OZONE LAYER  
Colombo, 16-19 October 2001

CONSUMPTION OF HYDROCHLOROFLUOROCARBONS IN PARTIES OPERATING  
UNDER PARAGRAPH 1 OF ARTICLE 5

Draft decision proposed by the European Community

Mindful that the consumption of hydrochlorofluorocarbons should be avoided where other more environmentally suitable alternative substances or technologies are available,

The Thirteenth Meeting of the Parties decides:

To request the Technology and Economic Assessment Panel,<sup>1</sup> after consulting all the relevant entities and reviewing the relevant documents:

- (a) To assess **and report on** the quantitative patterns in the overall and sector-specific consumption of hydrochlorofluorocarbons by Parties operating under paragraph 1 of Article 5 during the period 1995-2000 and to estimate the trends for the period 2001-2010;
- (b) To assess and report on the existing and future availability of non-hydrochlorofluorocarbon alternative substances or technologies to chlorofluorocarbons and to note in particular where sector-specific alternatives are not yet available;

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<sup>1</sup> See attached explanatory text.

- (c) Using the information obtained in pursuance of paragraphs (a) and (b) above, to evaluate technological, environmental, economic, safety and other factors that could influence the ability of Parties **operating under paragraph 1 of Article 5** to comply with **each of** several hydrochlorofluorocarbon control scenarios to be designed by the Panel, including the current control schedule under the Montreal Protocol, while also taking into account decision XI/28;
  
- (d) To evaluate the impact of each scenario **referred to** in paragraph (c) **above** on the phase-out of chlorofluorocarbons in Parties operating under paragraph 1 of Article 5, to report in 2002 **on progress made** and to submit a final report by 30 April 2003 to enable the Parties **to consider**, at the **23rd meeting of the** Open-ended Working Group in 2003, **an adjustment to the phase-out schedule for hydrochlorofluorocarbons for Parties operating under paragraph 1 of Article 5, based on the information contained in the report and other relevant information available at that time.**

## EXPLANATORY TEXT<sup>2</sup>

### 1. Introduction

All control measures are subject to review by the Parties on the basis of alternatives becoming available to replace ozone-depleting substances and, when implemented, promote the recovery of the ozone layer.

This draft decision requests the Technology and Economic Assessment Panel (TEAP) to examine past and likely future hydrochlorofluorocarbon (HCFC) consumption by sector in developing countries and, on a sector-by-sector basis, determine the potential for replacement of these HCFCs with non-HCFC alternatives.

In its assessment, the Panel is requested to report on technological, economic, environmental, safety and other factors that could affect the ability of a Party to comply with each “step-down” scenario to be designed by the Panel. The Panel is specifically asked to integrate decision XI/28 into its report and to assess the likelihood of each scenario disrupting the phase-out of chlorofluorocarbons (CFCs).

Finally, the Panel is requested to provide a progress report in 2002 and a final report in 2003. Based on the information in the report, the Parties may wish to consider an adjustment to the HCFC schedule for developing countries.

### 2. Background

Previous decisions on HCFCs have requested TEAP to report on the impact of proposed control measures, particularly their impact on developing countries, and the range of alternatives available to substitute for HCFC use. Many of the TEAP reports on which earlier decisions were based drew on information accumulated prior to 1994 and they are no longer as relevant as many more alternatives to CFCs and HCFCs have been commercialized since then.

The relevant decisions are listed in full at the end of this explanatory text. These previous decisions can be summarized as follows:

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<sup>2</sup> Note that the present explanatory text pertains only to the description of the study being undertaken by the Technology and Economic Assessment Panel. It is without prejudice to future decisions that the Parties might consider and has no legal standing. The text is not part of the decision and is provided here in order to provide a broader understanding of the intent of each paragraph.

Decision III/12 (Nairobi, 19-21 June 1991): Requested the assessment panels to determine the implications of a 1997 phase-out of controlled substances, in particular for developing countries; the use of transitional substances in assisting the phase-out; and the timetable, costs, etc. for the phase-out of transitional substances.

Decision IV/30 (Copenhagen, 23-25 November 1992): Requested the Technology and Economic Assessment Panel to evaluate alternative substances for the specific uses of HCFCs, identify where alternatives were not available and determine the uses of HCFCs by Article 5 countries; requested the Open-ended Working Group to consider the need for an HCFC regulation of consumption of HCFCs by Article 5 countries; decided that the Multilateral Fund should continue to fund HCFCs as replacements for CFCs; and requested the Executive Committee to report the amount of HCFCs being used by Article 5 countries and to update this annually.

Decision V/8 (Bangkok, 17-19 November 1993): Requested each Party to consider, in its selection of alternatives to HCFCs, the best alternative with respect to the environment, human health and safety, technology, commercialization, performance and economic factors; and requested TEAP to report annually on the best options.

Decision VI/13 (Nairobi, 6 and 7 October 1994): Requested TEAP to report on not-in-kind and in-kind alternatives for HCFCs and how alternatives compared with respect to energy efficiency, total global warming impact, flammability, toxicity and the potential impacts on the effective use of CFCs and halons.

Decision VIII/13 (San José, 25-27 November 1996): Requested UNEP to list possible HCFC sector-specific applications and TEAP to provide alternatives that were sector-specific. The results were reported in volume I of the Panel's April 1997 report and at the Ninth Meeting of the Parties in Montreal in 1997.

Decision XI/28 (Beijing, 29 November – 3 December 1999): Requested TEAP to report by 2003 or sooner on potential problems and options facing Article 5 countries that require HCFCs due to a freeze in production in non-Article 5 countries in 2004, especially with respect to quantity, quality and price.

### **3. Description of the intent of each paragraph**

**Chapeau:** This paragraph invites the Panel to obtain information from appropriate sources including staff in national ozone units, industry, case studies on non-HCFC alternatives and reports of workshops and study tours that address alternatives to CFCs and HCFCs. A list of information sources should be provided with the report.

Paragraph (a): This paragraph requests the Panel to determine quantitative patterns in sector-specific HCFC consumption for Article 5 Parties in the period 1995 to 2000. The year 1995 was when the bulk of non-HCFC alternative Multilateral Fund-funded projects commenced. The Panel is also requested to estimate future trends in HCFC consumption until 2010, when Article 5 Parties are scheduled to eliminate consumption of CFCs. The period from 1995 to 2010 in effect represents the period of greatest potential for HCFC deployment.

Since it will not be possible to cover all developing countries in the report, the Panel may wish to consider a number of Parties representative of a range of HCFC consumption – low, medium and high. A trend-based analysis is important for assessing changes in consumption over time and avoiding information biased by concentration on one or two years.

The Panel may also wish to consider other reports, such as a Swedish report on HCFCs submitted to the Executive Committee entitled “A Country-driven Approach to the Phase-out of Ozone-depleting Substances in Developing Countries”, prepared by R. Rasmussen *et al.* and published in 2001.

Paragraph (b): For these same sectors and Parties selected for assessment under paragraph (a), the Panel is asked to quantify where possible to what extent CFCs and HCFCs are being replaced by alternative substances or technologies. Some Article 5 Parties may select HCFCs instead of other alternatives to CFCs, and in these instances it would be useful to understand the reason or reasons for this selection.

Paragraph (c): Using the information derived from the Parties selected for assessment under paragraphs (a) and (b), the Panel is requested to generate three or four control scenarios and then evaluate technological, environmental, economic, **safety** and other factors that could affect the ability of these Parties to comply with each scenario.

The current control scenario provides for a freeze in 2016 and phase-out in 2040. The Panel may wish to select several other scenarios, each consisting of a freeze date, step-down dates and a phase-out date of 2040. The analysis needs to consider the ability of the Parties chosen under paragraph (a) to comply with each control scenario, on the basis of technological, environmental, economic, safety and other factors. **Economic factors relating to any non-HCFC alternative are particularly important since the affordability and cost-effectiveness of an alternative will largely determine its availability.**

It would be helpful if the Panel integrated the information being compiled in pursuance of decision XI/28 with the information that will be obtained for this current draft decision. However, the report under decision XI/28 is expected to cover factors affecting the quantity, quality and price of HCFCs. The present draft decision requests the Panel not only to include this information in its 2003 report but also to report on other elements – environmental, safety, availability of alternatives by sector, as well as other factors that the Panel considers important. Therefore, the present draft decision is broader in scope and aims to assist all Parties in taking any further decision related to the step-down of HCFCs in developing countries.

Paragraph (d): Reporting by the Panel would consist of a progress report at the Open-ended Working Group in 2002 and then submission of the final report for consideration at the first meeting of the Open-ended Working Group in 2003.

The report with its scenarios will provide *guidance* to the Parties, which should not therefore feel bound to any one scenario. Rather, it is possible that the Parties might favour a step-down scenario falling between two step-down scenarios examined by the Panel, if the Parties agreed such a “compromise” scenario was achievable.

Currently, there is no “road map” for “stepping down” HCFC use in developing countries from the freeze in 2016 to phase-out in 2040. A series of step-downs would provide certainty and “market fairness” to industry as plans are put in place in keeping with such a scenario.

#### **4. Previous decisions on HCFCs involving the Technology and Economic Assessment Panel**

##### **Decision III/12: Assessment Panels**

The *Third Meeting of the Parties* decided in *Decision III/12*:

- (a) To request the Assessment Panels and in particular the Technology and Economic Assessment Panel to evaluate, without prejudice to Article 5 of the Montreal Protocol, the implications, in particular for developing countries, of the possibilities and difficulties of an earlier phase-out of the controlled substances, for example of the implications of a 1997 phase-out;

- (b) Taking into account the London Resolution on transitional substances (Annex VII to the report of the Second Meeting of the Parties to the Montreal Protocol) to identify the specific areas where transitional substances are required to facilitate the earliest possible phase-out of controlled substances, taking into account environmental, technological and economic factors, where no other more environmentally suitable alternatives are available. The quantities likely to be needed for those areas of application currently served by transitional substances shall both be assessed;
- (c) To request the assessment panels to identify the transitional substances with the lowest potential for ozone depletion required for those areas and suggest, if possible, a technically and economically feasible timetable, indicating associated costs, for the elimination of transitional substances;
- (d) To request the assessment panels to submit their reports in time for their consideration by the Open-ended Working Group with a view to their submission for consideration by the Fourth Meeting of the Parties;
- (e) To endorse Decision II/2, paragraph 2, of the Second Meeting of the Conference of the Parties to the Vienna Convention.

**Decision IV/30: Hydrochlorofluorocarbons (HCFCs)**

*The Fourth Meeting of the Parties decided in Decision IV/30:*

1. To request the Technology and Economic Assessment Panel:
  - (a) to evaluate alternative substances and technologies to the application for HCFCs as refrigerant and as insulation gas in rigid foam;
  - (b) to identify other applications for HCFCs, if any, where other more environmentally suitable alternatives or technologies are not available; and
  - (c) to submit its findings to the Open-ended Working Group of the Parties to the Montreal Protocol no later than 31 March 1994;
2. To request the Open-ended Working Group to consider the report of the Technology and Economic Assessment Panel with respect to HCFCs; to consider the possible need for specific provisions for the implementation of the regulation on the applications for HCFCs, taking into account the special circumstances of Parties operating under paragraph 1 of Article 5 of the Protocol; and to make any

appropriate recommendations for consideration by the Parties at their Meeting in 1994 and following subsequent reviews taking place under Article 6 of the Protocol;

3. To ensure that, notwithstanding the new status of HCFCs as controlled substances, the incremental costs to Parties operating under paragraph 1 of Article 5 of the Protocol of making the transition from CFCs to HCFCs consistent with the regulation on the applications for HCFCs will continue to be met by the Fund and to request the Executive Committee to function in the light of this decision;
4. To request the Executive Committee to estimate, on an ongoing basis, the amount of HCFCs required by Parties operating under paragraph 1 of Article 5 of the Protocol and to recommend the methods of meeting such needs in full, simultaneously with the exercise to estimate the amounts of controlled substances needed, as well as to estimate the production available to meet those needs, as requested by the Open-ended Working Group at its seventh meeting.

#### **Decision V/8: Consideration of alternatives**

The *Fifth Meeting of the Parties* decided in *Decision V/8*:

1. That each Party is requested, as far as possible and as appropriate, to give consideration in selecting alternatives and substitutes, bearing in mind, *inter alia*, Article 2F, paragraph 7, of the Copenhagen Amendment regarding hydrochlorofluorocarbons,\* to:
  - (a) Environmental aspects;
  - (b) Human health and safety aspects;
  - (c) The technical feasibility, the commercial availability and performance;
  - (d) Economic aspects, including cost comparisons among different technology options taking into account:
    - (i) All interim steps leading to final ODS elimination;
    - (ii) Social costs;
    - (iii) Dislocation costs, etc.

- (d) Country-specific circumstances and due local expertise;
2. To note that the Executive Committee is taking the above considerations into account as far as information is available;
  3. To request the Technology and Economic Assessment Panel and its Technical Options Committees in the context of finalising its report, to provide information on which alternatives and substitutes best satisfied the above considerations, and to update this information on an annual basis;

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\*Article 2F, paragraph 7 of the Copenhagen Amendment (1992) reads as follows:

7. As of 1 January 1996, each Party shall endeavour to ensure that:
  - (a) The use of controlled substances in Group I of Annex C is limited to those applications where other more environmentally suitable alternative substances or technologies are not available;
  - (b) The use of controlled substances in Group I of Annex C is not outside the areas of application currently met by controlled substances in Annexes A, B and C, except in rare cases for the protection of human life or human health; and
  - (c) Controlled substances in Group I of Annex C are selected for use in a manner that minimises ozone depletion, in addition to meeting other environmental, safety and economic considerations.

### **Decision VI/13: Assessment Panels**

The *Sixth Meeting of the Parties* decided in *Decision VI/13* to request the Panels, as an inclusion in their ongoing work, to evaluate, without prejudice to Article 5 of the Montreal Protocol, the technical and economic feasibility, and the environmental, scientific, and economic implications for non-Article 5 countries, as well as Article 5 countries, bearing in mind Article 5, paragraph 1 *bis*, of the Copenhagen Amendment,\*\* of:

- (a) The alternatives to hydrochlorofluorocarbons in so doing, the Technology and Economic Assessment Panel is requested to consider the ozone-depleting substance substitution potential of not-in-kind alternatives, in-kind alternatives, and alternative technologies. In assessing this matter, the Technology and Economic Assessment Panel should consider how available alternatives compare with hydrochlorofluorocarbons with respect to such factors as energy efficiency, total global warming

impact, potential flammability, and toxicity, and the potential impacts on the effective use and phase-out of chlorofluorocarbons and halons; in time for consideration by the Open-ended Working Group at its eleventh meeting;

- (b) Alternatives to methyl bromide, in time for consideration by the Open-ended Working Group at its eleventh meeting;

In considering these matters, the Scientific Assessment Panel shall consider, if possible, atmospheric chlorine and bromine loadings and their impact on ozone depletion. The Technology and Economic Assessment Panel and Scientific Assessment Panel evaluations shall be solely for the purpose of discussions by the Parties and shall in no way be construed as recommendations for action.

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\*\*Article 5, paragraph 1 bis of the Copenhagen Amendment reads as follows:

1 bis

The Parties shall, taking into account the review referred to in paragraph 8 of this Article, the assessments made pursuant to Article 6 and any other relevant information, decide by 1 January 1996, through the procedure set forth in paragraph 9 of Article 2:

- (a) With respect to paragraphs 1 to 6 of Article 2F, what base year, initial levels, control schedules and phase-out date for consumption of the controlled substances in Group I of Annex C will apply to Parties operating under paragraph 1 of this Article;
- (b) With respect to Article 2G, what phase-out date for production and consumption of the controlled substances in Group II of Annex C will apply to Parties operating under paragraph 1 of this Article; and
- (c) With respect to Article 2H, what base year, initial levels and control schedules for consumption and production of the controlled substance in Annex E will apply to Parties operating under paragraph 1 of this Article.

**Decision VIII/13: Uses and possible applications of hydrochlorofluorocarbons (HCFCs)**

The *Eighth Meeting of the Parties* decided in *Decision VIII/13*:

1. That UNEP distribute to the Parties of the Montreal Protocol a list containing the HCFCs applications which have been identified by the Technology and Economic Assessment Panel, after having taken into account the following:
  - (a) The heading should read “Possible Applications of HCFCs”;
  - (b) The list should include a chapeau stating that the list is intended to facilitate collection of data on HCFC consumption, and does not imply that HCFCs are needed for the listed applications;
  - (c) The use as fire extinguishers should be added to the list;
  - (d) The use as aerosols, as propellant, solvent or main component, should be included, following the same structure as for other applications;
2. That the Technology and Economic Assessment Panel and its Technical Options Committee be requested to prepare, for the Ninth Meeting of the Parties, a list of available alternatives to each of the HCFC applications which are mentioned in the now available list.

**Decision XI/28: Supply of HCFCs to Parties operating under paragraph 1 Article 5 of the Protocol**

The *Eleventh Meeting of the Parties* decided in *Decision XI/28* to request the Technology and Economic Assessment Panel to study and report by 30 April 2003 at the latest on the problems and options of Article 5 Parties in obtaining HCFCs in the light of the freeze on the production of HCFCs in non-Article 5 Parties in the year 2004. This report should analyse whether HCFCs are available to Article 5 Parties in sufficient quantity and quality and at affordable prices, taking into account the 15 per cent allowance to meet the basic domestic needs of the Article 5 Parties and the surplus quantities available from the consumption limit allowed to the non-Article 5 Parties. The Parties, at their Fifteenth Meeting in the year 2003, shall consider this report for the purpose of addressing problems, if any, brought out by the report of the Technology and Economic Assessment Panel.

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