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OPEN-ENDED WORKING GROUP OF THE PARTIES TO
THE MONTREAL PROTOCOL ON SUBSTANCES THAT
DEplete THE OZONE LAYER
Fifteenth meeting
Nairobi, 3-6 June 1997

ISSUES BEFORE THE OPEN-ENDED WORKING GROUP
AT ITS FIFTEENTH MEETING

Note by the Secretariat

Addendum

1. Pursuant to decision VII/11, paragraph 7, of the Seventh Meeting of the Parties, ~~REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON STATUS OF~~ the status ~~USE OF THE CONTROLLED SUBSTANCES AND AVAILABILITY OF ALTERNATIVES FOR~~ purposes. ~~LABORATORY AND ANALYTICAL USES OF OZONE-DEPLETING SUBSTANCES~~ elimination ~~ITEM 4 (b) OF THE PROVISIONAL AGENDA~~ the Parties extend the global exemption for the use of controlled substances for laboratory and analytical uses, now valid until the end of 1998, to the end of 1999. In addition, the panel reiterated the importance of the measures mentioned in decision VII/11 and of reporting data annually under a global-essential-use-exemption framework that allows the Parties to monitor the success of reduction strategies.

II. QUANTITY OF CONTROLLED SUBSTANCES AUTHORIZED UNDER THE
ESSENTIAL-USE PROCESS (ITEM 4 (b) OF THE PROVISIONAL AGENDA)

2. A total of six Parties submitted essential-use nominations, which covered metered-dose inhalers (MDIs) for the treatment of asthma and chronic obstructive pulmonary disease (COPD) and for the inhalation of leuprolide for endometriosis, sterile aerosol talc, servicing of refrigeration and air conditioning equipment, and halon-2402. The nominations were for the years 1998 and/or 1999, with one emergency nomination for the year 1997. The recommendations and comments made by TEAP for these nominations are

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reproduced in paragraphs 0 to 0 below.

A. Essential-use nominations recommended by the Panel

Australia

| | | | |
|------------------------|--------------------------|-------------|-------------|
| Year: | | 1998 | 1999 |
| Tonnages: | CFC-11 | 35 | 49 |
| | CFC-12 | 85 | 120 |
| | CFC-114 | | 5 |
| Specific usage: | MDIs for asthma and COPD | | |
| Recommendation: | Recommend exemption | | |

3. Comments of the Panel. Australia requested an increment of 120 tonnes of CFCs to supplement the amount granted in 1996 for 1998, and requested an exemption of 174 tonnes for 1999. The Aerosols Technical Options Committee (ATOC) and TEAP noted that the 1996 use in Australia was 245 metric tonnes versus the allocation of 278 tonnes approved by the Parties. Furthermore, the allocation for 1997 is 194 tonnes and the requested addition for 1998 makes a total of 223 tonnes for that year. Thus in 1997, it appears that Australia might have a shortfall in its allocation, without use of stockpiles, increase of alternatives or importation of CFC-based MDIs. ATOC and TEAP recommend approval of the additional 120 tonnes (total allocation 223 tonnes) for 1998 and the total of 174 tonnes for 1999. However, if a significant reduction in CFC use is achieved in 1997, ATOC and TEAP urge Australia to try and maintain that reduction in subsequent years, despite the increased allocation being requested.

European Community

| | | |
|------------------------|--------------------------|-------------|
| Year: | | 1999 |
| Tonnages: | CFC-11 | 1690 |
| | CFC-12 | 2857 |
| | CFC-113 | 19 |
| | CFC-114 | 434 |
| Specific usage: | MDIs for asthma and COPD | |
| Recommendation: | Recommend exemption | |

4. Comments of the Panel. ATOC and TEAP welcome the reduction for 1999 compared to the amounts requested for previous years and the commitment to review this figure in 1998 with a view to further reduction in the light of regulatory approval of CFC-free alternatives.

Hungary

| | | | |
|-----------------|--------|-------------|-------------|
| Year: | | 1998 | 1999 |
| Tonnage: | CFC-11 | 6 | 3 |

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| | | |
|---------|------|------|
| CFC-12 | 2.25 | 3 |
| CFC-113 | 0.23 | 0.23 |
| CFC-114 | 1.7 | 3 |

Specific usage: MDIs for asthma and COPD

Recommendations: Recommend exemption

5. Comments of the Panel. The nomination from Hungary provides information to substantiate the nominated volumes. The volumes for 1998 and 1999, 10.18 and 9.23 tonnes, respectively, are comparatively small and well in line with previous needs and allocations.

Russian Federation

Year: 1998

| | | |
|-----------------|------------|-----|
| Tonnage: | CFC-11 | 226 |
| | CFC-12 | 226 |
| | Halon-2402 | 255 |

Specific usage: Halon-2402 for fire-fighting, CFC-11 and CFC-12 for MDIs for asthma/COPD

Recommendation: Recommend exemption

6. Comments of the Panel. TEAP and its Halon Technical Options Committee recommend that the Parties grant the essential-use nomination by the Russian Federation for 255 tonnes of halon-2402 for 1998. The Aerosols TOC and TEAP welcome the MDI-related application from the Russian Federation. The volumes and use seem appropriate. However, inadequate information to justify the nomination was provided. The amount of CFC required is the same as to one for 1997. In future, the Russian Federation is encouraged to complete its nominations as outlined in the Essential Use Handbook.

South Africa

Year: 1999

| | | |
|------------------|---------|-----|
| Tonnages: | CFC-11 | 69 |
| | CFC-12 | 174 |
| | CFC-114 | 3 |

Specific usage: MDIs for asthma and COPD

Recommendation: Recommend exemption

7. Comments of the Panel. South Africa was the only country to increase its essential-use nomination (by a small amount, 14 tonnes over 1998). This seems justified on the basis of enhancement of health-care systems and the likelihood of export to neighbouring countries. In order to clarify this understanding, South Africa is encouraged to include the accounting framework with its future nominations.

United States of America

| | | |
|------------------------|--------------------------|-------------|
| Year: | | 1999 |
| Tonnages: | CFC-11 | 1085.3 |
| | CFC-12 | 2539.7 |
| | CFC-114 | 280.8 |
| Specific usage: | MDIs for asthma and COPD | |
| Recommendation: | Recommend exemption | |

8. Comments of the Panel. ATOC and TEAP welcome the reduction for 1999 compared to the amounts requested for previous years. The quantities requested in the United States nomination are recommended for exemption.

9. ATOC noted the continued approval of new products that contain CFCs.

10. Although the United States practice of submitting some individual company requests increases transparency, some of those applications omitted or had insufficient details on the information required under the essential-use nomination criteria. It would be helpful if the United States could ensure that individual company applications were complete.

11. The summary of the nominations recommended by TEAP for essential-use production exemptions is contained in the annex to the present note.

B. Essential-use nominations not recommended

Russian Federation

12. An essential-use nomination was received from the Russian Federation that requested an exemption of 5,455 metric tonnes of CFCs for the servicing of refrigeration and air-conditioning equipment. This request mentioned, in particular, 60 million domestic refrigerators, 1.6 million units in the commercial refrigeration sector, 280,000 units in the industrial refrigeration sector, and air-conditioning equipment in defence systems.

13. The Refrigeration, Air Conditioning and Heat Pumps Technical Options Committee (RTOC) noted that there are clear options for reducing refrigerant demand. Specifically, the Russian Federation could apply:

(a) Better maintenance and minimization of leaks. The nomination did not specify whether better maintenance procedures are applied or whether systems are made more tight to reduce refrigerant losses;

(b) Recovery and recycling of refrigerant. The nomination did not contain information regarding recovery and recycling during maintenance and disposal. This would substantially reduce the demand for new refrigerant;

(c) Retrofit of equipment. The nomination did not include any information on retrofits either planned or under way. This particularly applies to retrofits to HCFCs and HFCs, which are readily available for commercial and industrial refrigeration.

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14. The nomination also did not indicate whether the Russian Federation could use refrigerant from stockpiles and/or use recycled refrigerants. RTOC emphasized that production in the Russian Federation has not been phased out and that it is impossible to judge whether stockpiles have been or are being built up. Furthermore, the existence of substantial recycling capacity has already been reported by the Russian Federation. The panel suggested that Parties may wish to consider the fact that recycled CFCs from the Russian Federation have been offered repeatedly on the international market during the period 1995-1996 and that a better domestic control of the flow of recycled quantities of controlled substances may eliminate the need for further production of CFC refrigerants in the Russian Federation.

15. The unanimous recommendation of TEAP and its Technical Options Committee was that the essential-use request by the Russian Federation cannot be further evaluated or recommended.

United States of America

| | | |
|------------------------|--|-------------|
| Year: | | 1998 |
| Tonnages: | CFC-11 | 0.167 |
| | CFC-12 | 0.444 |
| Specific usage: | MDI for inhalation of leuprolide for endometriosis | |
| Recommendation: | Unable to recommend | |

16. Comments of the Panel. Leuprolide has not yet been approved for marketing. Injectable forms and nasal spray of analogues are available. The reported reduction in side-effects, such as modest change in bone mineral density, has not been fully substantiated as a unique benefit. Based on the available data, it is not possible to accept leuprolide as an essential-use therapy. The United States withdrew this nomination on 15 April 1997.

C. Emergency essential-use nomination under decision VIII/9, paragraph 10

17. In February 1997, the United States submitted an essential-use nomination for sterile aerosol talc for authorization by the Secretariat. The Secretariat consulted TEAP. The quantity requested is 3 tonnes for 1997 to be transferred from essential-use allowance already granted for 1997.

18. The comments of the Panel are as follows:

(a) The submission states that sterile talc aerosol is manufactured in France. The source of CFC used to manufacture this product is undefined. There is no statement as to whether talc can be formulated in non-CFC containing formulations although it has been reported that an HFC formulation may be available outside the United States;

(b) The Aerosols TOC agreed that talc insufflation is unequivocally effective for treatment of malignant pleural effusion. The majority of TOC physicians favoured the limited availability of talc formulated as a

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CFC-containing aerosol because of:

- (i) An asserted benefit of sterility in this product; and
- (ii) Potential compromise of patients' needs if this formulation was not available.

A minority considered the dry-powder insufflation method, which has been in use for many years, to be as effective and safe and a possible adequate alternative. TEAP recommended that the Secretariat may wish to grant the emergency request for 1997.

19. Accordingly, the Secretariat granted the emergency essential-use exemption of 3 metric tonnes of CFC-12 for 1997 only. If the United States applies for an emergency-use exemption for 1998, it should apply early and with better documentation.

III. PROGRESS IN THE DEVELOPMENT AND IMPLEMENTATION OF NATIONAL TRANSITION STRATEGIES IN PARTIES NOT OPERATING UNDER ARTICLE 5 FOR NON-CFC TREATMENTS OF ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (ITEM 4 (c) OF THE PROVISIONAL AGENDA)

20. Only two countries, Australia and United States of America, have sent the Secretariat their proposed national MDI transition policies.

Australia

21. Australia has considered a number of approaches for the strategy. It opted for a reduction timetable for regulating imports and set itself indicative targets in consultation with companies. It is exploring the possibility of expediting the review of applications of CFC-free treatments and is ensuring that purchasing policies do not discriminate against non-CFC alternatives. It already has enough provisions and mechanisms to control misleading advertisements. The National Asthma Campaign will educate the consumers during the change-over period. Australian companies already taken steps to minimize emissions.

United States of America

22. The Food and Drug Administration (FDA) of the United States of America is proposing an MDI transition policy. This Advance Notice of Proposed Rule-making was published on 6 March 1997 by FDA, which coordinated its development extensively with the United States Environmental Protection Agency (EPA).

23. FDA and EPA expect many comments both from private citizens and the affected pharmaceutical companies in the next 60 days. The final regulations will take these comments into account.

IV. TRANSITION TO NON-CFC TREATMENTS OF ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN NON-ARTICLE 5 PARTIES THAT IS FULLY PROTECTIVE OF PUBLIC HEALTH (ITEM 4 (d) OF THE PROVISIONAL AGENDA)

24. There are at least 600 million people worldwide with asthma and COPD. Currently, some 500 million MDIs are used annually world-wide using approximately 10,000 tonnes of CFC.

25. The general status of the transition to non-CFC treatments for asthma and COPD in non-Article 5 Parties is as follows:

(a) Dry powder inhalers (DPIs) are continuing to be introduced by a number of companies into many countries. The increased DPI usage continues but since overall inhaled therapy has increased further, they have not reduced the sales of MDIs. Penetration of DPIs into a market depends on acceptance by health professionals and patients and on cost. There still remain several DPIs that are not available in some countries, for example, the United States of America and Japan;

(b) New therapy (oral). Two novel oral compounds for the treatment of asthma have been approved by the regulatory authorities in some countries. These may be of value to a small number of those with asthma, but is highly unlikely that these will be a substitute for the current effective inhaled preventive therapy;

(c) MDIs reformulated without CFCs. HFC-134a and HFC-227 have been approved as propellants in MDIs. In March 1995, the first approval for a CFC-free MDI was granted to 3M's Airomir™, a salbutamol product reformulated with hydrofluoroalkane 1,1,1,2-tetrafluoroethane (HFA-134a) propellant. By March 1997, over 35 countries had approved Airomir™ (Proventil™-HFA in the United States) for use, and approval was being sought in a number of additional countries. Additional companies have submitted applications to market CFC-free inhalers in a number of countries. Approvals are anticipated in the coming year, and at least two salbutamol CFC-free MDIs are expected to be available in a number of countries by the end of 1998. Since salbutamol MDIs are estimated to comprise half the total global use of MDIs, the potential exists for a significant reduction in consumption of CFCs in 1999. This is dependent on regulatory approval, reimbursement approval, patient/physician uptake, and subsequent early phase-out of CFC inhalers. The projected timetables for the launch of HFC-based MDI products shows that by the year 2000 at least 36 such MDIs will be launched in the European Union (in any one member State) and at least 11 will be launched in the United States.

(d) Education and training. To facilitate patient and physician utilization of the reformulated products, education and training are required. Options currently employed and planned include:

(i) Professional associations, through medical journals, reports, newsletters and conferences. ATOC welcomed national initiatives such as the professional/pharmaceutical collaboration embodied in the National Asthma Education and Prevention Programme in the United States;

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- (ii) Treatment guidelines issued by the country's medical authority, which document the advantages and drawbacks of different forms of therapy and recommend specific forms of care for specific patient groups. During 1995, the United States National Heart Lung and Blood Institute (NHLBI) and the World Health Organization (WHO) introduced a Global Initiative on Asthma (GINA). This Initiative is active within non-Article 5 and Article 5 countries;

- (iii) Additionally, symposia, promotional material and media coverage, pharmaceutical industry education of the medical profession and support of medical symposia, medical literature articles and support groups are the means adapted by many countries. Increasing numbers of symposia are scheduled for 1997-1998, culminating in a World Asthma Meeting in December 1998. This meeting will highlight issues surrounding the safe transition to non-CFC treatments. The Aerosol TOC encourages the United Nations Environment Programme to actively support the 1998 World Asthma Meeting.

V. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON THE FLEXIBILITY IN THE TRANSFER OF ESSENTIAL-USE AUTHORIZATIONS BETWEEN PARTIES (ITEM 4 (e) OF THE PROVISIONAL AGENDA)

26. The Eighth Meeting of the Parties granted a request to transfer an essential-use authorization from one Party to another on a one-time basis. This decision ensured an uninterrupted supply of CFCs to a Party where the CFC-based-MDI manufacturer had chosen to rationalize production outside that Party. The TOC believes this one-time transfer could serve as a model for similar situations provided that:

- (a) Both Parties agree to the transfer;
- (b) Total production volume does not increase; and
- (c) The intended use does not change.

27. The Parties may wish to consider the advantages of a decision allowing for flexibility in transfer without previous approval by the Parties, but with subsequent approval at a Meeting of the Parties provided these conditions are met.

VI. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON
THE IMPLICATIONS OF ALLOWING THE PRODUCTION OF CFCs FOR
MEDICAL APPLICATIONS ON A PERIODIC "CAMPAIGN BASIS"
(ITEM 4 (f) OF THE PROVISIONAL AGENDA)

28. With the phase-out of other CFC uses, an imbalance between the capacity of the plants that still produce CFCs and the demand they have to meet could occur. To operate a CFC unit efficiently it is necessary to run it above a minimum capacity, therefore, the CFC producer will be forced to run it intermittently in what is called a "campaign" whereby a large CFC manufacturer produces sufficient amount of CFC over a relatively short period (e.g. 1-6 months) to service the needs of multiple MDI manufacturers for a longer period.

29. An imbalance may however not materialize if the CFC plants are kept operating above the minimum capacity to meet basic domestic needs of Parties operating under Article 5. If needed, change from a continuous operation to a campaign operation cannot be accomplished overnight. A preliminary estimate indicate that 17-19 months would be required to complete a CFC stockpile through campaign production. Thus, if campaign productions were ever required, up to 2 years advance notice to producers would be needed.

30. Given the current schedule for the final phase-out of CFC-based MDIs, campaign production probably will not be needed except possibly at the end of the CFC-based MDI transition to provide for a final stockpile of pharmaceutical-grade CFCs to meet special patient needs.

31. The Technology and Economic Assessment Panel and its Aerosol TOC advised the Parties of the following possible implications of campaign production:

(a) If campaigns are not allowed, some CFC manufacturers may find continued production non-viable. A reduction in the number of CFC manufacturers would result in a higher risk of interruption to availability of CFC-based MDIs in case of catastrophic loss, plant failure, product quality, etc.;

(b) Each MDI manufacturer has in its product registration an identified, registered source of CFCs. If that source changes, then the registration dossier has to be changed for each product. The sole manufacturer(s) of campaign bulk CFC will have to be qualified to produce pharmaceutical-grade CFC by the national regulatory bodies. These processes could take at least two years;

(c) Article 5 country manufacturers that meet appropriate national specifications may be a potential future source of CFCs. However, the same specification and registration processes would be needed as indicated above. No Article 5 producer of CFCs currently supplies a non-Article 5 MDI manufacturer;

(d) There is a potential for a monopoly as fewer manufacturers will be willing to produce CFCs.

32. Since 1 January 1997, non-Article 5 Parties can produce CFCs only for

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supplying the basic domestic needs of Article 5 Parties or for essential uses permitted by a Meeting of the Parties. TEAP understands that pharmaceutical producers in most non-Article 5 Parties are obliged to buy their requirements of CFCs used in MDI products only from manufacturers registered with their regulatory agencies. The Parties may consider the advantage of granting transferable production exemptions that will allow Parties to acquire ODS from whichever Party is their supplier at the time. Producing Parties may be requested to report their exports for essential uses listing the destinations. This is suggested only to allow continued production of MDIs; it does not increase the overall quantities of CFCs produced.

VII. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON METHYL BROMIDE, INCLUDING THE AVAILABILITY OF VIABLE ALTERNATIVES FOR SPECIFIC APPLICATIONS (ITEM 5 (a) OF THE PROVISIONAL AGENDA)

33. The TEAP report gives a detailed analysis of the alternatives for methyl bromide techniques for emission reduction and recovery and recycling and elaborates on ongoing research.

(a) Soil treatment

34. The report provides details of both direct and indirect alternatives to methyl bromide for soil treatment for different types of crops at different stages and different conditions and gives details of where these alternatives are practised. It discusses non-chemical alternatives, such as integrated pest management, crop rotation, resistant varieties, grafting, biofumigation, solarization, steam and biological control, and chemical alternatives for soil treatment.

(b) Fumigation of durables

35. The alternatives to methyl bromide in the fumigation of durables include phosphine, control of pests by the use of controlled atmospheres, carbon dioxide, nitrogen or inert atmospheres generated by combustion, irradiation, etc. The report describes recent advances in development of alternatives.

(c) Fumigation of perishables

36. The report points out that even though quarantine and pre-shipment (QPS) uses have been exempted from the control measures, many alternatives have been approved and implemented in several countries. These include a systems approach, heat treatment, combination treatment, chemical dips and irradiation. The report also details research on alternatives that are close to implementation and points out the need to make shippers aware of the alternatives. It also points out the long time for acceptance of new treatments by all parties concerned and stresses the need to reduce this period.

(d) Fumigation of structures and transport

37. Alternatives to the use of methyl bromide for fumigating structures include phosphine with carbon dioxide and heat, heat and humidity, cold temperature, sulphuryl fluoride, modified atmospheres, hydrogen cyanide, integrated pest management, etc. The TEAP report discusses recent advances in development and use of alternatives.

VIII. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON THE NEED FOR AND MODALITIES (INCLUDING ESSENTIAL USE PROCESS), CRITERIA THAT COULD BE USED TO FACILITATE REVIEW, APPROVAL AND IMPLEMENTATION OF REQUESTS FOR CRITICAL AGRICULTURAL USE EXEMPTIONS (ITEM 5 (b) OF THE PROVISIONAL AGENDA)

38. The TEAP report points out that the Parties have provided a set of criteria under decision VII/29, paragraph 3, and that critical uses may apply to non-agricultural uses also. It also noted the powers given to the Secretariat for granting emergency essential-use exemptions in decision VIII/9, paragraph 10. TEAP favours a modification of the essential-use criteria set out in decision IV/25 so that they would read as follows, to accommodate methyl bromide:

"1. To apply the following criteria and procedure in assessing an essential use for the purposes of control measures in Article 2 of the Protocol:

"(a) That a use of a controlled substance should qualify as "essential" only if:

"(i) It is necessary for the health (**encompassing national food supply**), safety or is critical for the functioning of society (encompassing **economic**, cultural and intellectual aspects); and

"(ii) There are no available technically and economically feasible alternatives or substitutes that are acceptable from the standpoint of environment and health;

"(b) That production and consumption, if any, of a controlled substance for essential uses should be permitted only if:

"(i) All economically feasible steps have been taken to minimize the essential use and any associated emission of the controlled substance;

"(ii) The controlled substance is not available in sufficient quantity and quality from existing stocks of banked or recycled controlled substances, also bearing in mind the developing countries' need for controlled substances; and

"(iii) **It is demonstrated that a concerted effort is being made to evaluate, commercialize and secure national**

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regulatory approval of alternatives and substitutes."

39. TEAP believes that, with the modified criteria, methyl bromide can be treated like the other controlled substances for essential-use exemptions. It also notes that many technologies exist to reduce significantly the emissions from QPS use and recommends that Parties consider some incentive for adoption of these technologies. It considers that a process that allowed continued use of methyl bromide for low-emissive use, say less than 5 per cent, would open the way for the removal of the QPS exemption. It recommends that Parties may consider eliminating the QPS exemption and relying on the essential-use process.

IX. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON POSSIBLE USES OF MARKET-BASED MEASURES TO ALLOW FOR A GREATER FLEXIBILITY IN IMPLEMENTING THE REQUIREMENTS FOR LIMITATIONS ON METHYL BROMIDE (ITEM 5 (c) OF THE PROVISIONAL AGENDA)

40. The TEAP report describes a number of market-based measures, including taxes on methyl bromide production and imports, domestic product taxes, subsidies to alternatives and ecolabelling.

X. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON CONTROL OF TRADE IN METHYL BROMIDE WITH NON-PARTIES (ITEM 5 (d) OF THE PROVISIONAL AGENDA)

41. TEAP is not aware of any product that contains methyl bromide, except as a residue from fumigation and considers that it is not feasible or useful to screen for such products. It is, however, possible to control trade in products made with but not containing methyl bromide through, inter alia, certification by the shipper or other authority, quarantine records, field inspection by national authorities or controlled sales records. It is not possible to identify such products directly. The Secretariat would like to point out that as of 31 March 1997, only 65 Parties had ratified the Copenhagen Amendment.

XI. GENERAL COMMENTS BY THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL

42. TEAP found that the use of methyl bromide has increased in a number of countries, while it has decreased in some countries. While some developing countries have decreased the use of methyl bromide, some have increased it significantly. The increase by some countries can overwhelm progress made elsewhere. It notes the efforts of the Multilateral Fund and its Implementing Agencies and the national ozone units to spread awareness of the alternatives to the methyl bromide, as well as the efforts of the methyl bromide industry. These account for the positive and negative impacts on the use of methyl bromide. The TEAP report notes the use of alternative soil pest control methods in use in many developing countries for many crops such as cut flowers, tomatoes and strawberries. The demonstrations of carbon dioxide as an alternative for fumigation of stored grains in developing countries has been noted. Country-wide information on use of methyl bromide has been given for some countries. Use of alternatives in many developing

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countries for durable and perishable commodities and for structural pests has been noted. The report emphasizes the importance of continuing the applied research and field demonstration projects and awareness and information exchange.

43. The report also noted:

(a) That it is technically feasible to phase out 75 per cent of non-QPS use by 2001 with essential use provisions as recommended. There are no reasons why Article 5 and Parties not operating under Article 5 cannot pursue the same phase-out schedule;

(b) The challenges of finding and implementing alternatives to methyl bromide are no more difficult than the challenges solved by other sectors. Economic studies show a decreasing predicted impact of a switch to alternatives;

(c) There are a substantial number of alternative technologies available for soil fumigation that do not depend on methyl bromide. Although the adoption of particular alternatives or combinations thereof needs to be considered on a case-by-case basis to provide the optimum local solution, this is a normal process in agriculture, and is achievable in a limited time frame;

(d) In the absence of "technology forcing" through methyl bromide controls, there would be little incentive to convert to alternatives;

(e) The projects of the Multilateral Fund addressing major non-QPS uses in Article 5 countries, along with bilateral and local projects will provide a good basis for substantial reductions in methyl bromide use.

44. The Open-ended Working Group may wish to consider the report of the Technology and Economic Assessment Panel in the context of the proposed adjustments and amendments considered under item 3 of the provisional agenda for its fifteenth meeting.

XII. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL
ON IMPORTANT NEW DEVELOPMENTS (ITEM 6 (a) OF THE
PROVISIONAL AGENDA)

45. TEAP reported progress in the different sectors including the status of phase-out, alternatives used and barriers to transition. It reports that a TEAP Internet site (<http://www.teap.org>) has been set up to facilitate public access to its reports. One section of the report describes the status of military progress in phasing out ODS.

46. The Panel draws the attention of the Parties to a variety of substances with uncertain ODP values that are being (and which will continue to be) developed as substitutes to ODS or for other applications. Chlorobromomethane and n-propyl bromide are two such substances. TEAP recommends that the Parties may wish to decide that any new chemical with an ODP value of more than 0.01 be listed as a controlled substance and phased out at a date to be determined by the Parties. It recommends that newly

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developed substances with uncertain ODP values also be listed in a separate annex and their status be reviewed periodically by TEAP. TEAP also suggests that Multilateral Fund may not fund projects with such substitutes.

XIII. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL
ON MODALITIES AND CRITERIA FOR CONTINUED USE OF
CONTROLLED SUBSTANCES AS PROCESS AGENTS
(ITEM 6 (b) OF THE PROVISIONAL AGENDA)

47. In the TEAP report, "process agent" is defined as a controlled substance that, because of its unique chemical and/or physical property, facilitates an intended chemical reaction and/or inhibits an unintended chemical reaction.

48. The report has estimated the "make-up" and emissions of ODS used as process agents for Article 5 and non-Article 5 Parties separately for 1995 and 2000. It concludes that emissions of ODS used as process agents can be minimized to insignificant or trace levels similar to that allowed for feedstock use where a process with adequate control technology and destruction capability is employed. Emissions from non-Article 5 countries are similar to the insignificant quantities emitted from feedstock uses. Emissions in Article 5 Parties are significantly higher. Significant opportunities exist to accomplish near phase-out of use/emissions in Article 5 countries given availability of trained, skilled manpower, access to technology and adequate financing.

XIV. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON THE
LIST OF AVAILABLE ALTERNATIVES TO EACH HCFC APPLICATION
(ITEM 6 (c) OF THE PROVISIONAL AGENDA)

49. The report lists the possible applications of HCFCs and the available alternatives for each such application. In several cases alternatives have matured with low or no global warming potential (GWP); in other cases, the alternatives are HFCs or PFCs with high GWPs. TEAP recommends that the Parties consult the Scientific Assessment Panel for an elaboration on the harmful environmental effects of increased usage of chemicals with high GWPs.

XV. REPORT OF THE TECHNOLOGY AND ECONOMIC ASSESSMENT PANEL ON
THE FUTURE AVAILABILITY OF HALONS TO MEET THE DEMANDS FOR
USES (ITEM 6 (d) OF THE PROVISIONAL AGENDA)

50. The Halons Technical Options Committee has mentioned that recycled halon-1301 is being used for critical applications. Halon banks are being carefully managed. Halon-1211 fire extinguishers left in service are not recharged if used in a fire. Multi-purpose dry powder or, in some cases, HCFC-based fire-extinguishants, are used as alternatives. In the Russian Federation, a national programme to phase out halon-2401 has been formulated.

51. The Open-ended Working Group may wish to consider these reports and, in particular:

- (a) The policy regarding new, unlisted substances with uncertain ODP,

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which are being (and which will continue to be) developed and marketed;

(b) The modalities and criteria for the continued use of controlled substances as process agents.

XVI. REPORT OF THE IMPLEMENTATION COMMITTEE ON REVISED FORMATS FOR REPORTING DATA UNDER ARTICLE 7 OF THE MONTREAL PROTOCOL (ITEM 11 (a) OF THE PROVISIONAL AGENDA)

52. In response to decision VIII/21 of the Eighth Meeting of the Parties, the Secretariat circulated in January 1997 a list of all the reporting requirements under the Protocol and in the decisions of the Meeting of the Parties and requested all the Parties to communicate their views on which of the reporting provisions they considered essential for assessing compliance with the Protocol, which of those provisions might no longer be necessary and what possible improvements could be made to the reporting formats. The following Parties submitted responses to the Secretariat: Australia, the European Community, India, New Zealand, Norway, Poland, Seychelles and the United States of America. The Secretariat subsequently prepared a document summarizing the responses from the Parties, explaining the formats for data-reporting and containing sample formats that incorporated the suggestions made. The United States of America also prepared a questionnaire and format for consideration. The views of the Parties, the Secretariat's comments and the sample formats were placed before the Implementation Committee in Geneva on 15-16 April 1997. The Committee considered the relevant provisions of the Protocol, the decisions of the Parties containing reporting requirements and the comments submitted by Governments thereon with a view to considering which reporting provisions were essential for assessing compliance with the Protocol and which might be no longer necessary. The report of the Committee has been communicated to all the Parties as document UNEP/OzL.Pro/ImpCom/17/3. The Committee is meeting again on 2 June 1997 to finalize its recommendations, which will be presented to the fifteenth meeting of the Open-ended Working by the President of the Implementation Committee.

XVII. REPORT OF THE IMPLEMENTATION COMMITTEE ON INFORMATION FROM LATVIA (DECISION VIII/22), LITHUANIA (DECISION VIII/23), AND THE RUSSIAN FEDERATION (DECISION VIII/25) (ITEM 11 (b) OF THE PROVISIONAL AGENDA)

Latvia

53. Pursuant to decision VIII/22 of the Eighth Meeting of the Parties, the Secretariat wrote to the Government of Latvia seeking the information required by that decision and, in particular, an indication of the steps taken by Latvia to ratify the London Amendment to the Protocol. No information has been received from the country in response to that request. Nor has Latvia ratified the London Amendment. This matter was placed before the Implementation Committee, which made the following observations for consideration of the Ninth Meeting of the Parties:

(a) It regretted that Latvia had not yet submitted its timetable for the ratification process for the London Amendment, as requested by the Eighth

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Meeting of the Parties;

(b) It reiterated the request made to Latvia through decision VIII/22 of the Eighth Meeting of the Parties for the submission of its timetable for the process of ratification of the London Amendment;

(c) It reminded Latvia that, in accordance with the GEF eligibility criteria and as mentioned by the representative of the Facility at the seventeenth meeting of the Implementation Committee, the process for approval by GEF of the phase-out projects could begin only after GEF had been informed of the timetable for ratification of the London Amendment and that no financial assistance could be released until after the deposit of the instrument of ratification with the Secretary-General of the United Nations;

(d) It expressed the view that the situation with regard to ODS phase-out in Latvia should be kept under review.

54. The Working Group may wish to discuss this issue.

Lithuania

55. Pursuant to decision VIII/23 of the Eighth Meeting of the Parties, Lithuania submitted a report related to the implementation of the Protocol in Lithuania, as well as a request that its contributions to the Multilateral Fund be postponed until 2000. In a statement to the Implementation at its seventeenth meeting, a representative of Lithuania said that Lithuania has been a Party to the Protocol since April 1995 and was endeavouring to meet its obligations. It had phased out halons and the use of CFCs in the foam sector. Some ODS uses, especially in the refrigeration sector, were still, however, important. The figures for 1995 showed a decrease in consumption over the previous year and, although no exact figures were available, 1996 was expected to see a further reduction. Unfortunately, because of lack of funding, the conversion of some ODS capacity had to be suspended. Efforts were also being made to regulate trade through the issuance of permits by the Ministry of Environmental Protection, although it had not been possible to stop imports completely. Trade with non-Parties was also controlled. The country programme for Lithuania had been updated in late 1996/early 1997, but had not yet been submitted to the GEF Council for approval because it had not yet ratified the London Amendment. Lithuania did, however, expect that it would have completed the ratification process by September 1997 and expected more procedural flexibility in the submission and consideration of the country programme and its projects and would continue to make every effort to comply with the Protocol without outside support. With reference to the request of Lithuania for postponement of its contributions to the Multilateral Fund until the year 2000, the Secretariat and the Fund Secretariat clarified that there was no provision in the Protocol to permit such postponement.

56. At the end of its discussion at that meeting, the Implementation Committee made the following observations for the consideration of the Ninth Meeting of the Parties:

(a) It noted with satisfaction the information provided by the Government of Lithuania in response to decision VIII/23 and the presentation made by its representative to the Committee;

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(b) It noted that, according to the information provided by Lithuania, that country was in non-compliance with the Protocol in 1996 and was likely to be in a situation of non-compliance in 1997;

(c) It noted the information provided by the representative of Lithuania that her Government would ratify the London Amendment by September 1997 and encouraged Lithuania to submit in writing to the GEF secretariat a full timetable for the ratification process so that the work programme for that country could be considered expeditiously by the GEF Council;

(d) It noted that Lithuania had not yet submitted its ODS phase-out programme to the Implementation Committee and encouraged it to do so as soon as possible;

(e) It expressed the view that the situation regarding ODS phase-out in Lithuania should be kept under review.

57. The Open-ended Working Group may wish to discuss this issue.

Russian Federation

58. In response to decision VIII/25 of the Eighth Meeting of the Parties, the Russian Federation transmitted to the Secretariat preliminary data on production, exports and imports of ozone-depleting substances for 1996. At its seventeenth meeting, the Implementation Committee noted that the data provided was detailed, but there were some items that were difficult to understand, such as the reported exports to Parties not operating under Article 5 of the Montreal Protocol. The Committee also expressed concern at the exports and imports referred to in the report and questions were raised concerning the intended uses of the substances concerned.

59. At the end of the discussion, the Implementation Committee decided:

(a) To note the data provided by the Russian Federation for 1996, in accordance with paragraphs 4 and 7 of decision VIII/25;

(b) To note that the Russian Federation was in non-compliance with the Protocol for 1996;

(c) To note that the Russian Federation had continued to produce ODS during 1996 contrary to the provisions of the Montreal Protocol and decision VII/18 adopted at the Seventh Meeting of the Parties;

(d) To note also that the Russian Federation had exported both new and reclaimed substances to, and also imported ODS from, many Parties operating under Article 5 and those Parties not operating under that Article;

(e) To urge the Secretariat to draw the data report of the Russian Federation to the attention of the Parties that had reportedly imported ODS from or exported ODS to the Russian Federation and to request those Parties to provide detailed comments by 15 May 1997 on the imports/exports of ODS;

(f) To request the Russian Federation to submit to the Secretariat by 15

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May 1997 information on the ways in which it was maximizing the use of its recycling facilities to meet its internal needs and to diminish its production of new CFCs, in accordance with paragraph 6 of decision VIII/25;

(g) To request the Russian Federation to provide by 15 May 1997 details on the conditions of delivery of imports and exports of ODS in 1996, including the specific purpose for which the substances were intended to be used, in accordance with paragraph 7 of decision VIII/25;

(h) To request the Russian Federation to provide the names of the members of the Commonwealth of Independent States (CIS) to which it had exported ODS in 1996, together with the quantities exported;

(i) To revert to the question at its eighteenth meeting, which the Russian Federation was invited to attend.

60. The conclusions of the eighteenth meeting of the Implementation Committee on this matter will be placed before the Open-ended Working Group, which may wish to discuss the issue.

AnnexNOMINATIONS FOR ESSENTIAL USE EXEMPTIONS
(in metric tonnes)A. 1998 nominations: CFC-11 and CFC-12

| PARTY | CFC-11 | | | CFC-12 | | |
|-----------------------|---------------------------|--|----------------|---------------------------|--|-----------------|
| | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total |
| 1. Australia | 29.0 | 35.0 | 64.0 | 70.0 | 85.0 | 155.0 |
| 2. European Union | 1,778.0 | - | 1,778.0 | 3,307.0 | - | 3,307.0 |
| 3. Hungary | - | 6.0 | 6.0 | - | 2.25 | 2.25 |
| 4. Russian Federation | - | 226.0 | 226.0 | - | 226.0 | 226.0 |
| 5. South Africa | 62.0 | 69.0 | 131.0 | 156.0 | 174.0 | 330.0 |
| 6. United States | 1,204.3 | - | 1,204.3 | 2,814.7 | - | 2,814.7 |
| TOTAL | 3,073.3 | 336.0 | 3,409.3 | 6,347.7 | 487.25 | 6,834.95 |

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B. 1998 nominations: CFC-113, CFC-114 and halon-2402

| PARTY | CFC-113 | | | CFC-114 | | | Halon-2402 | | |
|-----------------------|---------------------------|--|-------|---------------------------|--|-------|---------------------------|--|-------|
| | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total |
| 1. Australia | - | - | - | 4.0 | - | 4.0 | - | - | - |
| 2. European Union | 16.0 | - | 16.0 | 509.0 | - | 509.0 | - | - | - |
| 3. Hungary | - | 0.23 | 0.23 | - | 1.7 | 1.7 | - | - | - |
| 4. Russian Federation | - | - | - | - | - | - | - | 255.0 | 255.0 |
| 5. South Africa | - | - | - | 5.0 | - | 5.0 | - | - | - |
| 6. United States | - | - | - | 369.0 | - | 369.0 | - | - | - |
| TOTAL | 16.0 | 0.23 | 16.23 | 887.0 | 1.7 | 888.7 | - | 255.0 | 255.0 |

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C. 1999 nominations: CFC-11 and CFC-12

| PARTY | CFC-11 | | | CFC-12 | | |
|-----------------------|---------------------------|--|---------|---------------------------|--|---------|
| | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total |
| 1. Australia | - | 49.0 | 49.0 | - | 120.0 | 120.0 |
| 2. European Union | - | 1,690.0 | 1,690.0 | - | 2,857.0 | 2,857.0 |
| 3. Hungary | - | 3.0 | 3.0 | - | 3.0 | 3.0 |
| 4. Russian Federation | - | - | - | - | - | - |
| 5. South Africa | - | 69.0 | 69.0 | - | 174.0 | 174.0 |
| 6. United States | - | 1,085.3 | 1,085.3 | - | 2,539.7 | 2,539.7 |
| TOTAL | - | 2,896.3 | 2,896.3 | - | 5,693.7 | 8,773.7 |

D. 1999 nominations: CFC-113 and CFC-114

| PARTY | CFC-113 | | | CFC-114 | | |
|-----------------------|---------------------------|--|-------|---------------------------|--|-------|
| | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total | Quantity approved to date | Quantity recommended for the approval of the Ninth Meeting of the Parties to the Montreal Protocol | Total |
| 1. Australia | - | - | - | - | 5.0 | 5.0 |
| 2. European Union | - | 19.0 | 19.0 | - | 434.0 | 434.0 |
| 3. Hungary | - | 0.23 | 0.23 | - | 3.0 | 3.0 |
| 4. Russian Federation | - | - | - | - | - | - |
| 5. South Africa | - | - | - | - | 3.0 | 3.0 |
| 6. United States | - | - | - | - | 280.8 | 280.8 |
| TOTAL | - | 19.23 | 19.23 | - | 725.8 | 725.8 |
