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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
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**PROCESS AGENTS: IMPLEMENTATION OF DECISIONS X/14 AND XV/7
OF THE MEETINGS OF THE PARTIES**

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Introduction /Background

1. In decision X/14 (Annex I), the Parties indicated, inter-alia, that the Executive Committee may consider a range of options to reduce the emissions of controlled substances from process agent use by Article 5 Parties to “levels agreed by the Executive Committee to be reasonably achievable in a cost-effective manner without undue abandonment of infrastructure”. Incremental costs which covered a range of cost-effective measures including, for example, process conversions, plant closures, emissions control technologies and industrial rationalisation, to reduce emissions of controlled substances to these levels should be eligible for funding in accordance with the rules and guidelines of the Executive Committee of the Multilateral Fund. Paragraph 3 of Decision X/14 also mandates the Executive Committee to agree levels of emissions that are “reasonably achievable” as indicated above. On the basis of this, the use of controlled substances as process agents would not be treated as consumption in Article-5 countries provided emissions are limited to the levels agreed by the Executive Committee to be “reasonably achievable”. The Executive Committee subsequently adopted framework guidelines/broad principles for process agent projects, under which it would consider funding of incremental costs for phase-out in process agent applications (Decision 27/28, Annex II)

2. The Executive Committee has up to now approved 13 individual projects to phase out the consumption of 1214 ODP tonnes of CTC used as a process agent at a total cost of US \$5,192,304 (Annex III). All the individual projects have employed process conversion to eliminate the use of CTC entirely, thus bypassing the requirement to specify acceptable levels of residual emissions. Three multi-year CTC phase-out plans have been approved in principle (China, D.P.R. Korea and India) and funding of annual tranches has commenced. The CTC phase-out plans for DPR Korea and for India also envisage process change for all applications, with no residual consumption. The CTC phase out plan for China envisages emission control for two applications in which CTC is currently used, but details of the proposed technology and estimated final emissions levels will be addressed at a later stage in the implementation of the project and details are not currently available.

3. In decision XV/7 (Annex IV) the Parties requested Article 5 Parties with endorsed process agent applications to report to the Executive Committee on progress in reducing emissions of controlled substances from process-agent uses and on the implementation and development of emissions-reduction techniques and alternative processes not using ozone depleting substances. The Parties also requested the Technology and Economic Assessment Panel and the Executive Committee to report to the Open-ended Working Group at its 25th session (in mid-2005) on the same issues.

4. Decision X/14 also requires Article 5 Parties to report to the Ozone Secretariat on the quantities of ODS used in process agent applications: that is, in applications contained in the lists approved in decisions XV/6 (Annex IV) and XV/7. The Ozone Secretariat is receiving reports from Article 5 Parties on the quantities of CTC used in process agent applications and has sought advice from the Fund Secretariat as to whether the Executive Committee has reached any conclusions on reasonably achievable emissions levels in line with the provisions of paragraph 3 of decision X/14.

Levels of consumption in Article-5 countries

5. Thirteen Article 5 countries have provided information on national consumption in the process agent sector through annual reports to the Fund Secretariat on progress with implementation of country programmes (details in Annex V). The consumption is principally CTC but some CFC-113 has also been reported together with a very small quantity of TCA. The information provided for China, DPR Korea and India is well understood since these countries have concluded national CTC phase-out agreements with the Executive Committee. For the other nine countries, individual process agent applications are not specified and therefore it is not certain that all the reported use would be eligible for funding. Further clarification of actual uses will be required in a number of countries.

Future actions

6. The Secretariat has informed the Ozone Secretariat that since no project involving emission reduction technology has yet been considered in detail by the Executive Committee, the Committee has not had an opportunity to consider the level of reductions that might be reasonably achievable, as defined in decision X/14. In this regard the Secretariat notes that, for the projects so far considered, the level of emissions before conversion is equal to the total reported CTC consumption by the relevant enterprise.

7. Since the Executive Committee (as well as the TEAP) is required to report to the 25th OEWG in mid-2005, the Secretariat proposes to seek relevant information from Article 5 Parties as per decision XV/7 early in 2005 and to prepare a draft report for consideration by the Executive Committee at its 45th Meeting.

8. The 2005 annual programme for China's national CTC phase-out plan (Document UNEP/OzL.Pro.44/33) includes one application for China in which it is proposed to reduce CTC consumption by a partial reduction in emissions. However in terms of the requirements of decision X/14, this is only a partial or first stage solution. Further measures will need to be taken at a later stage in implementation of the sector plan before the order of magnitude of the emissions levels envisaged falls within a range that might be considered to be reasonably achievable in the terms of the decision. Therefore the measures in the sector plan are not at this stage relevant to the implementation of decision X/14.

9. The overall issue of reductions of emissions levels in process agent uses is technically complex. To ensure that the draft report provides a comprehensive and technically sound coverage of the issues the Parties require to be addressed, the Secretariat will consider retaining the services of an expert consultant to assist with information collection and analysis.

10. The Executive Committee may wish to note the above, and to provide any guidance it considers relevant on the actions to be taken to ascertain levels of emissions that can be reasonably achieved from process agent uses in Article 5 countries in accordance with paragraph 3 of decision X/14.

Annex I

Decision X/14: Process Agents

Noting with appreciation the report of the Technology and Economic Assessment Panel and the Process Agent Task Force in response to Decision VII/10,

Noting the findings of the Technology and Economic Assessment Panel that emissions from the use of ozone-depleting substances as process agents in non-Article 5 Parties are comparable in quantity to the insignificant emissions of controlled substances from feedstock uses, and that yet further reductions in use and emissions are expected by 2000,

Noting also the Technology and Economic Assessment Panel's findings that emissions from the use of controlled substances as process agents in countries operating under Article 5, paragraph 1, are already significant and will continue to grow if no action is taken,

Recognizing the usefulness of having the controlled substances produced and used as process agents clearly delineated within the Montreal Protocol,

1. That, for the purposes of this decision, the term "process agents" should be understood to mean the use of controlled substances for the applications listed in table A below;
2. For non-Article 5 Parties, to treat process agents in a manner similar to feedstock for 1998 and until 31 December 2001;
3. That quantities of controlled substances produced or imported for the purpose of being used as process agents in plants and installations in operation before 1 January 1999, should not be taken into account in the calculation of production and consumption from 1 January 2002 onwards, provided that:
 - (a) In the case of non-Article 5 Parties, the emissions of controlled substances from these processes have been reduced to insignificant levels as defined for the purposes of this decision in table B below;
 - (b) In the case of Article 5 Parties, the emissions of controlled substances from process-agent use have been reduced to levels agreed by the Executive Committee to be reasonably achievable in a cost-effective manner without undue abandonment of infrastructure. In so deciding, the Executive Committee may consider a range of options as set out in paragraph 5 below;

4. That all Parties should:
 - (a) Report to the Secretariat by 30 September 2000 and each year thereafter on their use of controlled substances as process agents, the levels of emissions from those uses and the containment technologies used by them to minimize emissions of controlled substances. Those non-Article 5 Parties which have still not reported data for inclusion in tables A and B are urged to do so as soon as possible and in any case before the nineteenth meeting of the Open Ended Working Group;
 - (b) In reporting annual data to the Secretariat for 2000 and each year thereafter, provide information on the quantities of controlled substances produced or imported by them for process-agent applications;
5. That the incremental costs of a range of cost-effective measures, including, for example, process conversions, plant closures, emissions control technologies and industrial rationalization, to reduce emissions of controlled substances from process-agent uses in Article 5 Parties to the levels referred to in paragraph 3 (b) above should be eligible for funding in accordance with the rules and guidelines of the Executive Committee of the Multilateral Fund;
6. That the Executive Committee of the Multilateral Fund should, as a matter of priority, strive to develop funding guidelines and begin to consider initial project proposals during 1999;
7. That Parties should not install or commission new plant using controlled substances as process agents after 30 June 1999, unless the Meeting of the Parties has decided that the use in question meets the criteria for essential uses under decision IV/25;
8. To request the Technology and Economic Assessment Panel and the Executive Committee to report to the Meeting of the Parties in 2001 on the progress made in reducing emissions of controlled substances from process-agent uses and on the implementation and development of emissions-reduction techniques and alternative processes not using ozone-depleting substances and to review tables A and B of the present decision and make recommendations for any necessary changes.

(Tables A and B not reproduced)

Annex II

Process agents: implementation of decision X/14 (paragraphs 3, 5, and 6) of the Tenth Meeting of the Parties

109. Having taken note of the comments and recommendations of the Sub-Committee on Project Review (UNEP/OzL.Pro/ExCom/27/13, paras. 122-126), including the draft Framework Guidelines/Broad Principles for Process Agent Projects proposed by the Sub-Committee for adoption by the Executive Committee (UNEP/OzL.Pro/ExCom/27/13, para. 124), the Executive Committee decided:

- (a) That initial implementation of decision X/14 could proceed using the parallel approach outlined in document UNEP/OzL.Pro/ExCom/27/40;
- (b) To adopt the draft Framework Guidelines/Broad Principles for Process Agent Projects proposed by the Sub-Committee on Project Review, as contained in annex III to the present report;
- (c) That, on the basis of the broad principles that have been agreed, Implementing Agencies could submit a limited number of projects conforming to the agreed broad principles, for consideration at the Twenty-eighth Meeting;
- (d) To note, as additional projects were considered and approved, a body of information on cost-effectiveness, emissions limits, and other requirements concerning eligibility and the determination of incremental costs would emerge. This information could form the basis for the Executive Committee to report to the Parties on emissions limits (for the purposes of administering decision X/14) and for the possible development at a later stage of more detailed guidelines for each of the process agent applications listed in the decision.

(Decision 27/78)

Annex III

Process agent phase-out projects approved by the Executive Committee

Country	Agency	Project Title	ODP To Be Phased Out	Date Approved	Total Funds Approved
Individual projectst					
India	IBRD	Phase-out of use of carbon tetrachloride as process agent in the production of endosulphan by Excel Industries Limited	375.0	Jul-99	366,000
India	UNIDO	Conversion of carbon tetrachloride as process solvent to ethylene dichloride at Satya Deeptha Pharmaceuticals Ltd., Humnabad	27.9	Dec-00	260,133
India	UNIDO	Conversion of carbon tetrachloride as process solvent to trichloromethane at M/S Alpha Drugs India Ltd., Patiala	69.7	Dec-00	145,505
India	UNIDO	Conversion of carbon tetrachloride as process solvent to ethylene dichloride at Svis Labs Ltd., Ranipet	54.2	Dec-00	249,463
India	UNIDO	Conversion of carbon tetrachloride as process solvent to ethylene dichloride at Doctors Organic Chemicals Ltd., Tanuku	94.6	Dec-00	288,180
India	UNIDO	Conversion of carbon tetrachloride as process agent to monochlorobenzene at M/S Benzo Chemical Industries, Tarapore	23.0	Jul-01	136,786
India	UNIDO	Conversion of carbon tetrachloride as process agent to monochlorobenzene at Pradeep Shetye Ltd., Alibagh	133.9	Jul-01	279,001
India	UNIDO	Conversion of carbon tetrachloride as process agent to ethylene dichloride at Chiplun Fine Chemicals Ltd., Ratnagiri	16.7	Jul-01	155,830
India	UNIDO	Conversion of carbon tetrachloride as process agent to monochlorobenzene at FDC Limited, Roha	34.1	Jul-01	238,371
India	UNIDO	Conversion of carbon tetrachloride as process agent to monochlorobenzene at GRD Chemicals Ltd., Indore, M.P.	17.9	Jul-01	127,667
India	IBRD	Conversion of chlorinated rubber manufacture from carbon tetrachloride to non-ODS process at Rishiroop Organics Pvt. Ltd.	248.8	Jul-01	2,074,300
India	UNIDO	Conversion of carbon tetrachloride as process agent to cyclohexane at Amoli Organics Limited, Mumbai	38.5	Dec-01	385,367
Pakistan	UNIDO	Conversion of carbon tetrachloride as process solvent to 1,2-dichloroethane at Himont Chemicals Ltd.	80.0	Dec-01	485,701
Sector plans					
China	IBRD	Phase out the production and consumption of CTC for process agent and other non-identified uses (phase I)		Nov 02	65,000,000
India	IBRD/France/ Germany/ Japan	CTC phase-out plan for the consumption and production sectors		Jul-03	52,000,000
Korea, DPR	UNIDO	Plan for terminal phase-out of CTC		Dec-03	5,684,844

Annex IV

Decision XV/6. List of uses of controlled substances as process agents

The Parties to the Montreal Protocol decided: to adopt the following uses of controlled substances as a revised table A for decision X/14:

Table: List of uses of controlled substances as process agents

No.	Process agent application	Substance
1.	Elimination of NCl_3 in the production of chlorine and caustic	CTC
2.	Recovery of chlorine in tail gas from production of chlorine	CTC
3.	Manufacture of chlorinated rubber	CTC
4.	Manufacture of endosulphan (insecticide)	CTC
5.	Manufacture of isobutyl acetophenone (ibuprofen – analgesic)	CTC
6.	Manufacture of 1-1, bis (4-chlorophenyl) 2,2,2- trichloroethanol (dicofol insecticide)	CTC
7.	Manufacture of chlorosulphonated polyolefin (CSM)	CTC
8.	Manufacture of poly-phenylene-terephthal-amide	CTC
9.	Manufacture of fluoropolymer resins	CFC-113
10.	Manufacture of fine synthetic polyolefin fibre sheet	CFC-11
11.	Manufacture of styrene butadiene rubber	CTC
12.	Manufacture of chlorinated paraffin	CTC
13.	Photochemical synthesis of perfluoropolyetherpolyperoxide precursors of Z-perfluoropolyethers and difunctional derivatives	CFC-12
14.	Reduction of perfluoropolyetherpolyperoxide intermediate for production of perfluoropolyether diesters	CFC-113
15.	Preparation of perfluoropolyether diols with high functionality	CFC-113
16.	Bromohexine hydrochloride	CTC
17.	Diclofenac sodium	CTC
18.	Phenyl glycine	CTC
19.	Production of Cyclodime	CTC
20.	Production of chlorinated polypropene	CTC
21.	Production of chlorinated EVA	CTC
22.	Production of methyl isocyanate derivatives	CTC
23.	Production of 3-phenoxy benzaldehyde	CTC
24.	Production of 2-chloro-5-methylpyridine	CTC
25.	Production of Imidacloprid	CTC
26.	Production of Bupropfenzin	CTC
27.	Production of Oxadiazon	CTC
28.	Production of chloradized N-methylaniline	CTC
29.	Production of Mefenacet	CTC
30.	Production of 1,3- dichlorobenzothiazole	CTC
31.	Bromination of a styrenic polymer	BCM (bromochloro-methane)

Decision XV/7. Process agents

The Parties to the Montreal Protocol decided:

1. To note that decision X/14 called on the Technology and Economic Assessment Panel and the Executive Committee to review the list of process agent uses in table A of that decision, and to make appropriate recommendations for changes to the table;
2. To note that several Parties are submitting requests to have certain uses reviewed by the Technology and Economic Assessment Panel for inclusion in table A of decision X/14 as process-agent uses;
3. To request the Technology and Economic Assessment Panel to review requests for consideration of specific uses against decision X/14 criteria for process agents, and make recommendations to the Parties annually on uses that could be added to or removed from table A of decision X/14;
4. To remind Article 5 Parties and non-Article 5 Parties with process-agent applications listed in table A to decision X/14, as revised, that they shall report in accordance with paragraph 4 of decision X/14 on the use of controlled substances as process agents, the levels of emissions from those uses, and the containment technologies used by them to minimize emissions. In addition, Article 5 Parties with listed uses in table A, as revised, shall report to the Executive Committee on progress in reducing emissions of controlled substances from process-agent uses and on the implementation and development of emissions-reduction techniques and alternative processes not using ozone-depleting substances;
5. To request the Technology and Economic Assessment Panel and the Executive Committee to report to the Open-ended Working Group at its twenty-fifth session, and every other year thereafter unless the Parties decide otherwise, on the progress made in reducing emissions of controlled substances from process-agent uses and on the implementation and development of emissions-reduction techniques and alternative processes not using ozone-depleting substances;
6. To note that, because the 2002 report of the Technology and Economic Assessment Panel lists the process-agent applications in the table below as having non-negligible emissions, those applications are to be considered process-agent uses of controlled substances in accordance with the provisions of decision X/14 for 2004 and 2005, and are to be reconsidered at the Seventeenth Meeting of the Parties based on information reported in accordance with paragraph 4 of the present decision and paragraph 4 of decision X/14;

7. To note that, because the two uses of controlled substances at the end of the table below were submitted to the Technology and Economic Assessment Panel but not formally reviewed, those applications are to be considered process-agent uses of controlled substances in accordance with the provisions of decision X/14 for 2004 and 2005, and are to be reconsidered at the Seventeenth Meeting of the Parties based on information reported in accordance with paragraph 4 of the present decision and paragraph 4 of decision X/14;

Annex V**Consumption in the process agent sector as reported to the Fund Secretariat by Article 5 countries in annual reports on progress with implementation of country programmes**

Country	Chemical	Sector Consumption ODP tonnes	Year
Brazil	CTC	68.38	2003
China	CFC-113	17.11	2003
China	CTC	20,014.36	2003
Ecuador	TCA	2.27	2003
Egypt	CFC-12	51.00	2003
India	CFC-113	23.58	2002
India	CTC	2,065.80	2002
Korea, DPR	CTC	731.50	2003
Mali	TCA	0.20	2002
Mexico	CFC-113	26.40	2003
Oman	CTC	0.099	2003
Oman	TCA	0.003	2003
Pakistan	CTC	88.00	2003
Romania	CTC	157.30	2003
Sri Lanka	CTC	16.65	2003
Sudan	CTC	1.10	2003