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

**REPORT OF THE EXECUTIVE COMMITTEE TO THE XIIITH MEETING OF THE
PARTIES IN RESPONSE TO DECISION X/14: PROCESS AGENTS**

Introduction /Background

1. In Decision X/14, the Parties requested 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.
2. Decision X/14 also 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 included 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.

3. This report indicates the actions taken in response to Decision X/14 including information on projects approved for funding on the basis of the eligibility criteria contained in the decision and as elaborated by the Executive Committee.

Framework Guidelines

4. At its 27th Meeting in Decision 27/78 the Executive Committee adopted a set of framework guidelines/broad principles for consideration of process agent proposals, to give effect to Decision X/14 of the Parties. The text of Decision 27/78 is appended to this report (Annex I).

5. The framework guidelines require, inter-alia, that in conjunction with their first project, countries must provide a thorough sector overview containing all enterprises, stating all consumption and emissions figures and indicating those enterprises for which the country intends to seek compensation from the Multilateral Fund. To permit adequate consideration of the industrial rationalisation option, project proposals should cover all the production facilities in the country for the particular application under consideration. Additionally, the framework guidelines require that project proposals should be prepared consistent with all existing policies and guidelines of the Executive Committee. In particular, new-for-old plant replacement and technological upgrade need to be taken into account in accordance with Decisions 18/25 and 26/37. Finally the framework guidelines indicate that, where either emissions controls or process changes are proposed, the project submission must include an evaluation of the incremental costs of achieving various levels of emissions reductions by each technique.

6. The Executive Committee envisaged that 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.

Projects approved

7. A total of 11 process agent projects have been approved, all in India, and all for replacement of the use of carbon tetrachloride as a process agent. The applications covered are: manufacture of endosulphan (an agrochemical) – one project; manufacture of ibuprofen (a pharmaceutical product) eight projects, sub-sector now completed; manufacture of phenyl glycine, (a pharmaceutical product) one project, subsector now completed; manufacture of chlorinated rubber, one project. The total cost of the projects, including agency support costs, is US \$4.8 million. The total quantity of CTC phased out is 1096 ODP tonnes. Project cost-effectiveness ranged from US \$0.98 to US \$9.32 per kg. The four applications are all listed in Annex A to Decision X/14 of the Parties.

8. For each project, the most cost-effective option for the Multilateral Fund was found to be process conversion. In all cases except the manufacture of chlorinated rubber, which required replacement of most of the existing plant, the new process was similar to the old process, but was less efficient, requiring equipment changes to maintain the baseline level of production capacity. Apart from the endosulphan project (production capacity, 5000 tonnes per year), plants were

small with typical production levels of a few hundred tonnes of product per year. Because of this, individual project costs were generally less than US \$400,000.

9. As required by the Executive Committee's framework guidelines for process agent projects, the Government of India provided, through the relevant implementing agency, a profile of the consumption in each application or sub-sector for which project have been approved. The World Bank and UNIDO have received funding from the Multilateral Fund to prepare a phase-out strategy and plan for the remainder of the process agent sector in India, which will address the total consumption of 4067 ODP tonnes reported by India to the Fund Secretariat.

Levels of consumption in Article-5 countries

10. Six Article-5 countries have provided information on national consumption in the process agent sector in annual reports to the Fund Secretariat on progress with implementation of country programmes. The total level of consumption so far reported is 20,100 ODP tonnes. Details of the reported national consumption are provided in Annex II to this report. All the consumption so far reported has been carbon tetrachloride (CTC). There may be a need to clarify consumption records with reporting countries to confirm that all the reported consumption is in the process agent sector and that there has been no confusion with other uses of carbon tetrachloride, for instance as a solvent or a feedstock.

11. No other information has been provided to the Fund Secretariat about consumption of ODS as process agents in Article 5 countries. The World Bank has received funds from the Multilateral Fund to prepare a phase out strategy and plan for China which will address process agent consumption in that country.

Emissions controls versus process change

12. Decision X/14 envisaged a body of information emerging on, inter-alia, the implementation and development of emissions-reduction techniques. It is not possible to report on this method of limiting emissions since no projects have proposed this modality. In each case, the information and analysis provided in the project document has proposed and justified the implementation of process change. While emissions reductions techniques must not be ruled out, process change technologies have so far proved to be the most cost-effective option.

Annex I

Decision 27/78: Process agents: implementation of Decision X/14 (paragraphs 3, 5, and 6)
of the Tenth Meeting of the Parties

“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; (*reproduced below*)
- (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.”

Framework guidelines/broad principles for process agent projects

General principles

1. In conjunction with their first project, countries must provide a thorough sector overview containing all enterprises, stating all consumption and emissions figures and indicating those enterprises for which the country intends to seek compensation from the Multilateral Fund. The country should indicate whether the relevant consumption information has been submitted as part of its Article 7 consumption reports, and if not, its intentions and progress in this regard.

2. For the purpose of project submissions, consumption at the enterprise level is the quantity of process agent in ODP tonnes used annually by the enterprise as 'make-up' in the relevant process. Information on the amount of ODS contained in the process equipment should be included with the project submission.
3. To permit adequate consideration of the industrial rationalisation option, a project proposal should cover all the production facilities in the country for the particular application under consideration.
4. Project proposals should be prepared consistent with all existing policies and guidelines of the Executive Committee. In particular, new-for-old plant replacement and technological upgrade need to be taken into account in accordance with Decisions 18/25 and 26/37.
5. Initial projects will be considered for the applications listed in Table A of Decision X/14 in order to provide information on reasonably achievable emissions reductions and associated costs.
6. The projects should indicate which applicable measures are proposed to control emissions (e.g. emissions control technologies, process conversion, plant rationalisation or closure) the cost effectiveness and the emissions reductions which can be achieved.
7. Where either emissions controls or process changes are proposed, the project submission must include an evaluation of the incremental costs of achieving significant levels of emissions reductions by each technique.
8. The cost-effectiveness of process agent projects will initially be considered on a case by case basis to provide a body of information which can be a basis for the establishment of appropriate cost-effectiveness thresholds in due course.

Annex II

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

Country	Chemical	Sector Consumption ODP tonnes	Year
Argentina	CTC	4648.60	2000
Brazil	CTC	830.50	2000
Croatia	CTC	312.42	2000
India	CTC	4066.70	2000
Mexico	CTC	10219.00	2000
Sri Lanka	CTC	11.44	2000
Total		20088.66	
