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Executive Committee of
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Implementation of the Montreal Protocol

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Addendum

PROJECT PROPOSALS: THE PHILIPPINES

Philippines - Ozone Depleting Substances phase-out investment programme**General comments**

- (1) The Executive Committee approved at its fourth meeting (June 1991) US \$400,000 to the World Bank for project preparation in the Philippines (Controlled Substances Engineering project). The project preparation included development of investment projects in: CFC recycling in refrigeration and MAC; non-ODS solvent application in electronic and mechanical cleaning; and non-ODS foam and tobacco application.
- (2) Ten investment project proposals covering tobacco fluffing, rigid polyurethane foam (insulating foam) and solvents have been submitted by the World Bank on behalf of the Government of the Philippines for final approval by the Executive Committee.
- (3) All ten projects have been costed and the incremental costs have been determined based on the type of technology to be used, operational costs/savings and share of foreign ownership. Only two of the projects in the solvent sector were budgeted for less than US \$500,000 each.
- (4) The World Bank provided the necessary documentation in accordance with the recommendations of the Sub-Committee which were adopted by the Executive Committee at its eighth meeting. The documentation included technical reviews by the Bank's Ozone Operation Resource Group (OORG) members which were based on pre-appraisal mission's reports by the Bank's task managers and consultants.
- (5) The World Bank provided schedules for estimated disbursement, and indicated the expected date for concluding the grant agreement.
- (6) Project implementation will be locally co-ordinated by an "Ozone Desk" under the Department of Environment and Natural Resources, Government of the Philippines' lead agency, which will ensure consistency of project with the country programme. A financial institution will be responsible for implementation of the investment projects, including appraisal, disbursement of funds and monitoring, against a fee equivalent to 3 per cent of funds allocated for investment projects.
- (7) The World Bank also submitted six proposals in the refrigeration and air conditioning sectors. The identification of these projects included estimated costs. Also substantial technical reviews by OORG members were attached. The project proposals are submitted with a request for "permission to proceed".
- (8) The Fund Secretariat has commented on all of the proposals received. The World Bank has responded to the Secretariat's comments on the ten proposals submitted for final approval. No response was provided to the Secretariat's comments on the proposals submitted with a request for permission to proceed.

- (9) While the Secretariat recommends that final approval should be granted to the ten projects, it would like to underscore the importance of the following issues:
- (i) costs of laboratory and testing equipment requested in the four rigid polyurethane foam projects might not be incremental, since such equipment are used (or should be in use) by the manufacturers for 100 per cent CFC-11 blown foam;
 - (ii) only equipment replacing current capacity qualify for funding. No equipment should be procured with resources from the Multilateral Fund to expand existing capacity;
 - (iii) cost of training varies from US \$60/day to US \$1,300/day (in the four rigid polyurethane foam projects) which is incongruent with the fact that the same technology will be used for the same purpose in the same country by the same implementing agency; and
 - (iv) in addition to i-iii above, recommendations cited by OORG reviewer regarding certain aspects of technology and costs should be taken into consideration while appraising the projects.
- (10) The ten project proposals are clustered in three groups as demonstrated in project evaluation cover sheets prepared by the Fund Secretariat and appended to these comments. The first group consists of one project, tobacco fluffing; the second group consists of four rigid polyurethane foam projects and the third group consists of the five solvent projects.
- (11) The Secretariat recommends approval of funding at US \$11.42 million for the ten projects proposed with the provision that comments 6(1)-(iv) mentioned above be taken into consideration at the appraisal stage.
- (12) The Secretariat further recommends that the request for "permission to proceed" regarding the refrigeration and air conditioning projects should be granted with the understanding that the feasibility of these projects is ascertained in light of several critical issues raised by the OORG sector experts.
- (13) The World Bank should be requested to incorporate all the above mentioned projects in the global strategies being developed by it for the refrigeration (both insulating foam and refrigerants) and solvents sectors.

PROJECT EVALUATION SHEET

COUNTRY OR REGION: The Philippines

PROJECT TITLE: Conversion of tobacco fluffing process to carbon dioxide at Fortune Tobacco Corporation

BUDGET: US \$11,810,000 Investment Costs

INCREMENTAL COSTS: US \$4,720,000

ODS PHASEOUT: 350 MT OF CFC-11

COST EFFECTIVENESS: US \$13.5/Kg. ODP saved¹

PROJECT DURATION: Two years for construction phase: 15 year project life

IMPLEMENTING AGENCY: The World Bank

NATIONAL COORDINATING AGENCY: Department of Environment and Natural Resources

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. This project will eliminate the 350 MT of CFC-11 used for tobacco fluffing at Fortune Tobacco Corporation. The CFC-11 fluffing process will be replaced with AIRCO's DIET carbon dioxide-based system which is already being used at 26 locations worldwide. The patent holder and distributor of the system is AIRCO Industrial Gases of New Jersey, United States of America.
2. Total capital costs for the conversion of the fluffing process are US \$11.81 million of which the incremental capital costs are estimated at US \$8 million after deducting the salvage value of the existing CFC-11 fluffing facility. Incremental operational costs take into account patent royalties (US \$4.543 million over 4 years), operational costs and cost savings resulting from replacing CFC-11 with carbon dioxide. After 1998, when royalty payments for the AIRCO's process ceases, cost savings will be higher than operational costs; therefore, total incremental operational costs will be negative. Project incremental costs are adjusted, accordingly.

SECRETARIAT'S RECOMMENDATIONS

3. The project is recommended for final approval and for funding in the amount of US \$4,720,000.

Endnotes:

1. Determined as the ratio of incremental costs to the estimated annual saving of ODP. For CFC-11, ODS = ODP.

PROJECT EVALUATION SHEET

COUNTRY OR REGION: The Philippines

PROJECT TITLE: Application of a reduced CFC Blowing Agent and non-CFC Application Preparation at the following refrigerator manufacturers:

- Philippines Appliance Corporation Industries
- Concepcion Industries
- Sanyo Philippines
- Federal Electric Company

BUDGET: US \$6,456,000 - Total project costs (Phase I and II)

INCREMENTAL COSTS: US \$3,990,000¹

ODS PHASE-OUT: 169 metric tonnes (Phase I & II)

COST EFFECTIVENESS: US \$14.8 to 154.0/Kg. ODP saved²

PROJECT DURATION: Four years

IMPLEMENTING AGENCY: The World Bank

NATIONAL COORDINATING AGENCY: Department of Environment and Natural Resources

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. The four sub-projects are dealt with, for the purpose of this evaluation, as a cluster since they concern the same sub-sector (rigid polyurethane insulating foam).
2. Implementation of these sub-projects will result in an estimated average annual phase-out of 169 tonnes of CFC-11, which is 45 per cent of CFC-11 consumed in the rigid polyurethane foam sector of the Philippines.
3. A three-phase approach is proposed for the total phase-out of ODS in the four sub-projects. Phase I (1993-1996) will use proven technology to reduce CFC-11 by 50 per cent. Phase II (1997-1998) will consist of replacing the remaining CFC-11 with HCFC-22 based blowing agent, and Phase III (1999 and onwards) will employ an HFC.

4. Both Phase I and II are currently implemented in developed countries, however, Phase II is not yet commercially available for immediate transfer to developing countries as reported by the World Bank.

5. Although unit cost (cost effectiveness US \$14.8 - 154.0/Kg. ODP saved by each sub-project) is diverse and relatively high, the Bank stated that the variation in unit cost is due to economies of scale and it is likely that the final appraisal may show somewhat lower funding requirements.

5. General Electric and Sanyo are minority partners of Philippines Appliance Corporation (39 per cent) and Sanyo Philippines (30 per cent), respectively. The eligible incremental costs are adjusted accordingly.

SECRETARIAT'S RECOMMENDATIONS

7. The project is recommended for final approval and for funding in the amount of US \$3,990,000. Any remaining problems should be resolved during the appraisal mission. If necessary, costs of individual items may be adjusted accordingly. The results of the appraisal should be reported to the Executive Committee.

Endnotes:

1. The following table lists the projects per company, cost and amount of CFC-11 to be phased-out:

	Direct Investment (in thousand US \$)	Net Savings (in thousand US \$)	Incremental Cost* minus Transnational Component (in thousand US \$)	CFC-11 (Phase-out tonnage)
Philippines Appliance Corporation	3,180	710	1,770	120
Concepcion Industries	800	133	790	35
Sanyo Philippines	810	9	660	9
Federal Electric Company	660	13	770	5
TOTAL	5,450	865	3,990	169

* The figures in this column include 15 per cent contingency and 3 per cent service charge accruing to the local financial institution.

2. Determined as the ratio of incremental costs to the estimated annual saving of ODP. For CFC-11, ODS = ODP.

PROJECT EVALUATION SHEET

COUNTRY OR REGION: The Philippines

PROJECT TITLE: (1) Conversion to Semi-Aqueous and Aqueous Cleaning Solvents at Ionics Circuits, Inc.

(2) Conversion to Low-Emission Processing and Organic Solvents at Pacific Semiconductors, Inc.

(3) Conversion to Semi-Aqueous and Aqueous Solvents at Electronic Assemblies, Inc.

(4) Conversion to High-Purity Water Cleaning at Integrated Microelectronics.

(5) Conversion to Semi-Aqueous Cleaning Solvents as Solid Circuits.

BUDGET: US \$2,724,000 (Total Project Costs)

INCREMENTAL COSTS: US \$2,710,000¹

ODS PHASE-OUT: 138 MT of CFC-113 and 86 MT of Trichloroethane

COST EFFECTIVENESS: US \$4.6 ~ 142.0/Kg. ODP saved²

PROJECT DURATION: Six months

IMPLEMENTING AGENCY: The World Bank

NATIONAL COORDINATING AGENCY: Department of Environment and Natural Resources

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. The five sub-projects are dealt with, for the purpose of this evaluation, as a cluster since they concern the same sub-sector (electronic components cleaning).
2. The technologies proposed are: aqueous cleaning, semi-aqueous cleaning and organic solvents cleaning for electronic components and metal parts. One or a combination of two of the three proposed technologies will be used by each company as appropriate.

3. These technologies are proven in the developed countries. Environment protection measures are planned in the projects and each sponsoring enterprise will have to obtain an Environment Compliance Certificate according to the Philippines law to address issues related to environmental risks such as water pollution.

4. Implementation of the five sub-projects will result in an estimated average annual phase-out of 138 tonnes of CFC-113 and 86 tonnes of TCE (Trichloroethane).

5. Taiwanese and Canadian companies are minority partners of Ionic Circuits, Inc. (10 percent) and Pacific Semiconductors, Inc. (20 percent), respectively. The eligible incremental costs are adjusted accordingly.³

6. These sub-projects have training components. Coordination of these training components might result in a more cost-effective implementation of these sub-projects.

SECRETARIAT'S RECOMMENDATIONS

7. The Project is recommended for Final Approval and for funding in the amount of US \$2,710,000.

Endnotes:

1. Incremental costs are adjusted by the amount of local ownership for each project, individually.
2. Determined as the ratio of incremental costs to the estimated annual saving of ODP. For CFC-11, ODS = ODP.
3. The following table lists the projects per company, cost and amount of CFC-11 to be phased-out:

	Direct Investment Cost (in thousand US \$)	Net Operational Cost for four years (in thousand US \$)	Incremental Cost* minus Transnational Component (in thousand US\$)	CFC-113/TCE (Phase-out tonnage)
(1) Conversion to Semi-Aqueous and Aqueous Cleaning Solvents at Ionics Circuits, Inc.	510	236	790	98/73
(2) Conversion to Low-Emission Processing and Organic Solvents at Pacific Semiconductors, Inc.	590	163	710	12/13
(3) Conversion to Semi-Aqueous and Aqueous Solvents at Electronic Assemblies, Inc.	560	34	710	5/0
(4) Conversion to High-Purity Water Cleaning at Integrated Microelectronics	550	187	430	19/0
(5) Conversion to Semi-Aqueous Cleaning Solvents at Solid Circuits	90	31	70	4/0
Totals:	2,300	215	2,710	138/86

* The figures in this column include 15 per cent contingency and 3 per cent service charge accruing to the local financial institution.