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Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

Eighteenth Meeting
Vienna, 22-24 November 1995

PROJECT PROPOSALS: PHILIPPINES

This document includes the Comments and Recommendationf from the Fund Secretariat on the following projects:

Foam

- Residual Phaseout of CFCs in the Manufacture of PUF Foam at RGC Foam Group (Polyfoam/Uratex) UNDP
- Phase-out of CFCs in the manufacture of PU foam for insulation and structural purposes at Himalaya Mfg Corp. UNDP

Halon

- Umbrella project for the conversion of production of portable halon fire extinguishers of member companies of Fire Protectors Federation Inc. UNDP

SECTOR:	FOAM	ODS use in sector (1991):	1,180 ODP tonnes
Sub-sector cost-effectiveness thresholds:	General Foam		US \$9.53/kg
	Rigid Foam		US \$7.83/kg

- (a) Residual phaseout of CFCs in the manufacture of polyurethane foam at RGC Foam Group
- (b) Phaseout of the use of CFCs in the manufacture of polyurethane foam for insulation and structural purposes at Himalaya Manufacturing Company*

Project Data	General Foam	Rigid Foam
	RGC Foam Group	Himalaya
ODS phase-out (ODP tonnes)	70	17
Proposed project duration (Yrs)	1.5	1
Incremental capital cost (US\$)	700,000	101,000
Contingency (%)	9.4	0
Incremental operational cost (US\$)	10,000	35,000
Total project cost (US\$)	710,000	136,000
Local ownership (%)	100	100
Export component (%)	0	0
Amount requested (US\$) {Original	1,555,000	156,000
{Revised	650,000	101,000
Cost effectiveness (US\$/kg)	9.29	5.94
National Coordinating Agency	DENR	DENR
Implementing Agency	UNDP	UNDP
Technical review completed?	Yes	Yes

Secretariat's Recommendations		
Amount recommended (US \$)	650,000	101,000
Project impact (ODP tonnes)	70	17
Cost effectiveness (US \$/kg)	9.29	5.94
Implementing Agency support cost (US\$)	84,500	13,130
Total cost to Multilateral Fund	734,500	114,130

* New proposal to the 18th Meeting

PROJECT DESCRIPTION

Project on the Consolidated List

(a) Residual Phaseout of CFCs in the Manufacture of Polyurethane Foam at RGC Foam Group

1. The RGC Foam Group operates four plants which manufacture flexible slabstock foam, flexible molded foam, integral skin foam, rigid molded and rigid spray foams.

2. The company has undertaken major efforts to phaseout CFCs in recent years. Its use of CFCs would have been without these efforts 550 tonnes in 1994. The residual use of CFCs remains in technically challenging areas such as supersoft foams, integral skin foams and rigid foams.

3. The company has already started on its own an equipment replacement programme from low pressure technology to high pressure, as well as product modification programme to mitigate product quality problems. Early 1995, RGC was able to completely phaseout the use of CFCs in its slabstock programme. The sales in molded and spray foams increased however substantially, so that the 1994 figures do not provide a true picture of the use of CFCs in the different applications. The consumption from July 1994 through June 1995 was 70 tonnes and this figure has been taken as baseline consumption.

4. Under the project, the RGC Foam Group will complete the phaseout of the use of CFCs in the manufacture of polyurethane foams, namely in flexible molded and integral skin foams and rigid spray foams.

5. In flexible molded foams, methylene chloride will be complemented with water based technology. Low pressure equipment will be replaced by high pressure, to maintain product quality and processing. In integral skin and rigid foam, all water based formulations have been selected. As this technology is currently not introduced by chemical suppliers in the Philippines, short term (about 1-2 years) interim use of HCFC-141b may be needed. Equipment will be replaced by high pressure, or existing high pressure equipment will be retrofitted to adjust to the different component ratios.

6. The capital cost of the project relate to the cost of six high pressure dispensers of capacity 40-80l/min. to replace existing low pressure dispensers, retrofit of six others, trials and technology transfer. The project also incurs a minimal incremental operating cost.

Project for the 18th Meeting

- (b) Himalaya Mfg. Corp. phase-out of the use of CFCs in the manufacture of PU foam for insulation and structural purposes

7. Himalaya Mfg. Corp. was established in 1986. The enterprise manufactures cool-boxes, having a double-walled body shell of medium density polyethylene (also manufactured in-house) which is injected with polyurethane foam for insulation purposes. The enterprise also manufactures high density rigid polyurethane foam pallets, used mainly for transportation. The factory was recently destroyed in a fire. (Hence, the enterprise requests an urgent implementation of this project). Its equipment base includes two Cannon low pressure dispensers (model C-60RF and C-60FL2).

8. In the manufacture of rigid polyurethane foam insulated cool-boxes and rigid polyurethane foam transport pallets, the enterprise will adopt all water-based technology. As the introduction of water based systems will take time to adjust flowability and to cope with the higher mold pressures, HCFC-141b may be used for a limited period as an interim blowing agent.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Project for the Consolidated List

1. The project of the RGC Foam Group was first submitted for consideration at the 17th Meeting of the Executive Committee. However, the project was considered ineligible because its cost-effectiveness, as well as incremental operational costs calculations were not based on eligible data. These issues have been resolved in the resubmitted project.
2. The cost effectiveness is based on general foams due to the multiple nature of the conversion activity, and is within the threshold for that subsector.

Project for the 18th Meeting

3. During the project review, the Secretariat and UNDP discussed the situation of Himalaya Mfg. Corp. regarding its destruction by fire. UNDP had started project preparation before the fire occurred and had all the necessary baseline data on the factory. Furthermore, the enterprise continued to exist as an entity and was attempting to maintain its products and market share by contracting out its production to other facilities.
4. Having considered all circumstances, it was agreed between the Secretariat and UNDP that the difference between a new high pressure machine and a new low pressure machine of equivalent capacity should be considered as the basis for the calculation of the incremental capital cost, while the incremental operational cost is calculated according to the normal procedure. The following indicates the calculation of the incremental capital cost:

One high pressure foam dispenser with two mixheads	US \$	133,000
Trials and start-up		3,000
Technology transfer/training		5,000
Sub-Total		<u>141,000</u>
Less cost of low pressure dispenser		<u>40,000</u>
Incremental capital cost	US \$	101,000

5. Contingency and incremental operational cost were not requested by the company.

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the projects with associated support costs at the funding levels shown in the table below:

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
(a) Residual Phaseout of CFCs in the Manufacture of Polyurethane Foam at RGC Foam Group	650,000	84,500	UNDP
(b) Himalaya Mfg. Corp. phase-out of the use of CFCs in the manufacture of PU foam for insulation and structural purposes	101,000	13,130	UNDP

2. The Fund Secretariat further recommends that project (a) be included in the Consolidated List.

**PROJECT EVALUATION SHEET
THE PHILIPPINES**

SECTOR: HALON ODS use in sector (1993): 210 ODP tonnes

Sub-sector cost-effectiveness thresholds: US \$1.48/kg

Project Title: Umbrella project for the conversion of production of portable halon fire extinguishers of Member Companies of Fire Protectors Federation Inc. of the Philippines*

Project Data	
	Fire Protectors Federation Inc.
ODS phase-out (ODP tonnes)	77.1
Proposed project duration (Yrs)	1.5
Incremental capital cost (US\$)	138,600
Contingency (%)	10
Incremental operational cost (US\$)	-28,477
Total project cost (US\$)	110,123
Local ownership (%)	100
Export component (%)	0
Amount requested (US\$) ☐ Original	110,123
☐ Revised	110,123
Cost effectiveness (US\$/kg)	1.48
National Coordinating Agency	Dept. of Environment and Natural Resources/Environmental Management Bureau
Implementing Agency	UNDP
Technical review completed?	Yes

Secretariat's Recommendations	
Amount recommended (US \$)	114,108
Project impact (ODP tonnes)	77.1
Cost effectiveness (US \$/kg)	1.48
Implementing Agency support cost (US\$)	14,834
Total cost to Multilateral Fund	128,942

*

New Proposal to 18th Meeting.

PROJECT DESCRIPTION

1. This project is an umbrella project for the 23 fire equipment companies members of the Philippines Fire Protectors Federation, Inc. The purpose of the project is to eliminate the consumption of 25 MT halon 1211/year (average over 3 years) used for production of new portable H-1211 fire extinguishers in Philippines. The project will cover the cost of cylinder production, new filling equipment for ABC powder and CO2 and recovery units for halon 1211 in order to use recovered halons for refilling of existing fire extinguishers.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Secretariat received confirmation from UNDP that this project represents a sub-sectoral phase-out of halon fire extinguisher manufacturers in the Philippines. The Department of Environment and Natural Resources is planning to ban all new applications of Halon 1211 and Halon 1301 from 1998 by issuing a regulation controlling import of halons through a licensing system. A halon recovery/recycling programme for the Philippines is funded by this grant.

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the umbrella project for the halon fire extinguisher sub-sector with associated support costs at the funding level shown in the table below:

Project	Project Cost US \$	Support Cost US \$	Implementing Agency
Umbrella project for the conversion of production of portable halon fire extinguishers of Member Companies of Fire Protectors Federation Inc. of the Philippines	114,108	14,834	UNDP

2. To note that this project represents the phase out of the halon fire extinguisher sub-sector and the provision of halon banking facilities in the Philippines.