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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: MEXICO

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

- Group project: Conversion to CFC-free technology in the manufacture of rigid polyurethane foam (spray) UNDP
- Conversion to CFC-free technology in the manufacture of polyurethane foam at Paneles UNDP
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- Conversion to CFC-free technology in the manufacture of insulated construction panels at Galvamet UNDP

PROJECT EVALUATION SHEET MEXICO

SECTOR: FOAM ODS use in sector (1989): 1,629 ODP tonnes

Sub-sector cost-effectiveness thresholds: Rigid Foam US \$7.83/kg

Project Titles :

- (a) Galvamet -Conversion to CFC-free technology in the manufacture of insulated construction panels*
- (b) Group Project -Conversion to CFC-free technology in the manufacture of rigid polyurethane foam (spray)*
- (c) Paneles -Conversion to CFC-free technology in the manufacture of polyurethane foam*

Project Data	Galvamet	Group Project	Paneles
ODS phase-out (ODP tonnes)	96	100	81
Proposed project duration (Yrs)	1	N/A	1
Incremental capital cost (US\$)	96,500	345,000	100,000
Contingency (%)	9.93	3	11.11
Incremental operational cost (US\$)	99,000	162,500	27,500
Total project cost (US\$)	195,500	507,500	127,500
Local ownership (%)	100	100	100
Export component (%)	N/A	0	N/A
Amount requested (US\$) {Original	195,500	507,500	100,000
{Revised	195,500	507,500	100,000
Cost effectiveness (US\$/kg)	2.20	5.08	1.23
National Coordinating Agency	Ozone Protection Unit, National Institute of Ecology		
Implementing Agency	UNDP	UNDP	UNDP
Technical review completed?	Yes	Yes	Yes

<i>Secretariat's Recommendations</i>			
Amount recommended (US \$)	195,500	507,500	100,000
Project impact (ODP tonnes)	88.7	100	81
Cost effectiveness (US \$/kg)	2.20	5.08	1.23
Implementing Agency support cost (US\$)	25,415	65,975	13,000
Total cost to Multilateral Fund	220,915	573,475	113,000

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New proposals to 18th Meeting

PROJECT DESCRIPTION

(a) Galvamet - Conversion to CFC-free technology in the manufacture of insulated construction panels

1. Galvamet manufactures insulated construction panels on a continuous double belt panel line installed in 1992. Its products are sold mainly on the Mexican market with some export to Latin America.

2. Galvamet will phaseout the use of CFC-11 in its production of insulated construction panels, which are currently manufactured with rigid polyurethane (PUR) foam as insulation medium, utilizing CFC-11 as blowing agent. Future CFC-free production is anticipated to use polyisocyanurate (PIR) foam as insulation medium and a mixture of water and HCFC-141b as the blowing agent. In this way, it is expected that cost increases can be minimized while product performance can be maintained. Any other approach would render the company uncompetitive with its competitors. The conversion requires relatively minor modifications, mostly related to the metering of HCFC-141b and the introduction of slow curing PIR. Thus, the capital costs include the cost of anodization of the aluminum heating plates, resealing mixhead, heaters and installation of HCFC-141b pump and rotameters. The project includes an elaborate programme of trials and validation testing, required to maintain market acceptance for the modified product.

(b) Group Project - Conversion to CFC-free technology in the manufacture of rigid polyurethane foam (spray)

3. The Mexican spray foam industry is characterized by a large number of small, relatively unsophisticated manufacturers that offer sprayfoam frequently as a small part of a construction activity. Three domestic System Houses are the main suppliers catering to this industry, in addition to international manufacturers, such as ICI and Bayer, who supply substantial system quantities directly.

4. The objective of this project is (i) to phaseout the use of CFCs at a group of ten spray foam manufacturers, (ii) to make the necessary technology and systems needed locally commercially available and (iii) to demonstrate the application of an innovative, cost effective approach in which the system supplier will provide the technology transfer on behalf of the implementing agency.

5. The project will serve as a demonstration project for the feasibility of such an approach for small foam manufacturers. A detailed report will be prepared and presented to the Fund after finalization of the project to assess the success of this approach and to provide suggestions for modifications, fine tuning and other actions that could improve cost-effective implementation even more.

6. Under the project, the ten spray foam contractors will convert to non-CFC-technology under the guidance of their sole system supplier, Productor Eiffel S.A. de C.V. The project introduces water based technology, but contractors that have initial problems to meet insulation standards will be offered the option to use HCFC-141b and convert to water at a later stage. Eiffel will at its own cost develop the two non-CFC-sprayfoam systems to be used in the project

- one with HCFC-141b and one water based. Equipment of the participating spray foam enterprises will be modified or replaced to allow for both systems.

7. Capital cost of the project relate to provision of a sprayfoam dispenser at Eiffel, initial survey, trials, training and equipment replacement and retrofit at the ten enterprises estimated at the average of US \$25,000 per enterprise.

8 Incremental operational cost for only one year will be requested and it will be designed as an incentive programme in the way that transfer to water based systems is “honoured” with a somewhat larger disbursement than transfer to HCFC-141b.

(c) Paneles - Conversion to CFC-free technology in the manufacture of polyurethane foam

9. Grupo Paneles S.A. de C.V. manufactures lightweight steel wire reinforced panels used as cavity fillers between two walls. The company produces for the Mexican and central American markets. It uses a fixed ratio Graco Foamcat 400 machine purchased in 1992.

10. Paneles will phaseout the use of CFCs through the introduction of all water based technology. For this purpose, the existing foam dispenser will be replaced by a variable ratio unit. The capital cost of the project includes the cost of high pressure sprayfoam dispenser with special applicator, foam trials, training and technology transfer. Operating costs may vary and, therefore, are not claimed.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. All three projects meet the cost-effectiveness threshold for rigid foam projects.
1. Regarding the export component of Galvamet's and Paneles' products, specific figures for the volume of export were not provided. However, the exports are to Central and Latin American countries which are all Article 5 countries, and therefore not taken into account in the calculation of eligible project costs.

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 \$	Implementin g Agency
(a) Galvamet - Conversion to CFC-free technology in the manufacture of insulated construction panels	195,500	25,415	UNDP
(b) Group Project - Conversion to CFC-free technology in the manufacture of rigid polyurethane foam (spray)	507,000	65,975	UNDP
(c) Paneles - Conversion to CFC-free technology in the manufacture of polyurethane foam	100,000	13,000	UNDP

2. To urge UNDP to expedite implementation of the Group Project as a priority project in order to enhance its utility as a pilot/demonstration project, and to provide a full report with recommendations, as necessary, not later than 15 months from the date of approval of the project.