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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Fifty-ninth Meeting
Port Ghalib, Egypt, 10-14 November 2009

PROJECT PROPOSAL: DOMINICAN REPUBLIC

This document consists of the comments and recommendations of the Fund Secretariat on the following project proposals:

Foam

- Conversion from HCFC-141b in the manufacture of polyurethane rigid insulation foam for commercial refrigerators at Fabrica de Refrigeradores Comerciales

UNDP

**PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECT
DOMINICAN REPUBLIC**

PROJECT TITLE(S)**BILATERAL/IMPLEMENTING AGENCY**

(a) Conversion from HCFC-141b in the manufacture of polyurethane rigid insulation foam for commercial refrigerators at Fabrica de Refrigeradores Comerciales	UNDP
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NATIONAL CO-ORDINATING AGENCY

Programa Nacional de Ozono (PRONAOZ) Subsecretaría de Gestión Ambiental

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT**A: ARTICLE-7 DATA (ODP TONNES, 2008, AS OF OCTOBER 2009)**

HCFCs	48.9		

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2008, AS OF OCTOBER 2009)

ODS			
HCFC-22	48.1	HCFC-123	0.3
HCFC-141b	0.5		

CFC consumption remaining eligible for funding (ODP tonnes)

0.0

**CURRENT YEAR BUSINESS PLAN
ALLOCATIONS**

	Funding US \$	Phase-out ODP tonnes
(a)	Based on decision 55/43 (b)	n/a

PROJECT TITLE:	
ODS use at enterprise (ODP tonnes):	2.6
ODS to be phased out (ODP tonnes):	2.6
ODS to be phased in (ODP tonnes):	0
Project duration (months):	18
Initial amount requested (US \$):	395,500
Final project costs (US \$):	
Incremental Capital Cost:	345,000
Contingency (10 %):	34,500
Incremental Operating Cost:	16,000
Total Project Cost:	395,500
Local ownership (%):	100
Export component (%):	N/A
Requested grant (US \$):	395,500
Cost-effectiveness (US \$/kg):	152.12
Implementing agency support cost (US \$):	29,663
Total cost of project to Multilateral Fund (US \$):	425,163
Status of counterpart funding (Y/N):	N/A
Project monitoring milestones included (Y/N):	Y
SECRETARIAT's RECOMMENDATION	For individual consideration

PROJECT DESCRIPTION

1. On behalf of the Government of Dominican Republic, UNDP has submitted to the 59th Meeting of the Executive Committee a project to phase out the use of 2.6 ODP tonnes (23.6 metric tonnes) of HCFC-141b used by Fábrica de Refrigeradores Comerciales (FARCO) in the manufacture of polyurethane rigid insulation foam for commercial refrigerators. The cost of the project as submitted is US \$395,500 plus agency support costs of US \$29,663. It is scheduled to be completed in 18 months.
2. At its 22nd Meeting, the Executive Committee approved US \$423,000 for UNDP for the conversion of the commercial refrigerator manufacturing plant at FARCO by replacing 27.0 ODP tonnes of CFC-11 with HCFC-141b as a foam blowing agent, and 4.8 ODP tonnes of CFC-12 by HFC-134a as refrigerant.
3. FARCO will convert its HCFC-141b foam manufacturing operations to the use of cyclo-pentane as blowing agent. This will require the replacement of the existing high pressure and low pressure dispensers by one new dispenser with two mixing heads, and installation of a premixing station. It will also require an extraction station in which moulds and fixtures can be moved during filling; safety related equipment (including gas sensing, alarm systems and other measures to ensure safe use of cyclo-pentane); trials, training and safety audits. The total incremental capital cost of the project is US \$379,500 (including 10 per cent contingency). Implementation of the project will result in incremental operating cost of US \$16,000 over a two-year period.
4. It is stated in the project proposal that the company “feels forced” to submit the project for an accelerated HCFC phase-out by one of its main customers who wishes to have refrigeration equipment manufactured with zero ODP/low GWP gases or otherwise would be in risk of removal from the approved supplier list, with major economical consequences to the plant, including job losses.

SECRETARIAT’S COMMENTS AND RECOMMENDATION

COMMENTS

5. The Secretariat reviewed the project in the context of the policy paper on the revised analysis of relevant cost considerations surrounding the financing of HCFC phase-out submitted to the 55th Meeting (UNEP/OzLPro/ExCom/55/47), relevant decisions adopted on HCFC phase-out, as well as relevant guidelines and policies relating to approval of foam projects under the Multilateral Fund.

HCFC-141b consumption

6. The Secretariat drew the attention of UNDP to the 2008 ODS consumption data report submitted by the Government of Dominican Republic under Article 7 of the Montreal Protocol. According to this report, HCFC consumption in Dominican Republic consists of 48.09 ODP tonnes of HCFC-22, 0.47 ODP tonnes of HCFC-141b and 0.33 ODP tonnes of HCFC-123. However, the project is proposing to phase out 2.6 tonnes of HCFC-141b. Furthermore, a preliminary survey conducted in the country, has identified at least 5 foam companies with an estimated consumption of 13.2 ODP tonnes of HCFC-141b. The Secretariat advised UNDP that unless the Government resubmits revised HCFC-141b consumption data reflecting the new situation to the Ozone Secretariat, this project (as well as other projects identified in the survey) could be considered as ineligible for funding under the Multilateral Fund.
7. UNDP stated in its response that the Government of Dominican Republic had not included the consumption of HCFCs contained in pre-mixed polyols imported into the country in the data reported for 2008. However, the Government will correct this omission as part of its HPMP preparation and report HCFCs from formulated systems operating in the country on as part of its annual reporting under Article 7 of the Protocol.

Baseline foam dispensers

8. In order to establish the eligibility of funding for the second low pressure dispenser included in the project proposal, the Secretariat sought clarification from UNDP regarding the circumstances of the existence of that equipment since only one low pressure dispenser existed at the time of conversion from CFC-11 to HCFC-141b (22nd Meeting of the Committee). UNDP responded that the replaced dispenser in the CFC phase-out project (a 1987 Decker DB 30 low-pressure dispenser) was destroyed. However, in 1998 the company purchased another 30 kg/min low-pressure dispenser for some new products as the layout would not allow placing all fixtures around the new high pressure dispenser. Accordingly, the current production programme was much different from the one existing in 1996 when the plant was converted from CFC-11 to HFC-134a. Since the conversion to cyclopentane would require a higher output dispenser for large fixtures, it would be more economical and consistent with the production layout to replace both machines by one double-head with two-phase motors instead of having two high pressure dispensers.

9. The cost of the project as agreed is US \$395,500 (i.e., US \$379,500 incremental capital cost and US \$16,000 operating cost). The cost-effectiveness of the project is US \$152.12/kg (US \$16.73/metric kg). A copy of the tables with agreed costs are attached as Annex I to this document.

Impact on the environment

10. The Secretariat attempted to make a preliminary calculation of the impact on the climate of the phase-out of HCFC consumption through the FARCO foam project in Dominican Republic, based only on the GWP values of the blowing agents and their levels of consumption before and after conversion. According to this methodology, once the project is completed, a total of 23.64 metric tonnes of HCFC-141b will be phased-out, 13.0 tonnes of cyclo-pentane will be phased-in, and 16,530 tonnes of CO₂ that would have been emitted into the atmosphere would be avoided.

Substance	GWP	Tonnes/year	CO ₂ -eq (tonnes/year)
Before conversion			
HCFC-141b	713	23.64	16,855
After conversion			
HC	25	13.00	325
Net impact			(16,530)

RECOMMENDATIONS

11. Recalling decision 55/43(b) by which the Executive Committee invited bilateral and implementing agencies to prepare and submit project proposals to the Secretariat for those HCFC uses addressed in paragraphs (c), (d), (e) and (f) of the decision, so that it could choose those projects that best demonstrated alternative technologies and facilitated the collection of accurate data on incremental capital cost and incremental operating costs or savings, as well as other data relevant to the application of the technologies, the Executive Committee may wish:

- (a) To note that the outstanding policy issue for funding second-stage conversion projects;
- (b) To consider the project for the phase-out of HCFC-141b in Dominican Republic in light of the Secretariat's comments regarding the country's 2008 HCFC consumption data;

- (c) To consider approving the project at the funding level indicated below and subject to conditions stated in sub-paragraphs (d) and (e) below should it be in a position to approve the project:

Project	Amount recommended (US \$)	Agency support cost (US \$)
Conversion from HCFC-141b in the manufacture of polyurethane rigid insulation foam for commercial refrigerators at FARCO	395,500	29,663

- (d) To request UNDP and the Government of Dominican Republic to deduct 2.60 ODP tonnes (23.64 metric tonnes) of HCFCs from the starting point for sustained aggregate reductions in eligible consumption as set by the Dominican Republic's HCFC phase-out management plan (HPMP), and
- (e) To request UNDP to provide to the Secretariat, at the end of each year or part thereof of the project's implementation period, progress reports that address the issues pertaining to the collection of accurate data in line with the objectives of decision 55/43(b), and to include these reports in the implementation reports of the HPMP, once it is approved.

Annex I
Agreed level of funding for the HCFC conversion of FARCO plant in Dominican Republic

Table 1: Project Cost

Description	US \$
Hydrocarbon Storage/blending	
Premixing module consisting of polyol tank	15,000
Premixing unit	60,000
Sub-total Storage/Blending	75,000
Foam Equipment	
Double head, pentanized high-pressure dispenser, 100 kg/min.	150,000
Sub-total Foam Equipment	150,000
Safety Related Equipment	
Safety/alarm systems, base console	25,000
5 Sensors	10,000
Process exhaust	20,000
Civil works	10,000
Electrical modifications (grounding, etc.)	10,000
Sub-total Safety Related	75,000
General	
Training and International Technical Support	20,000
Trials	10,000
Testing	5,000
Safety audit	10,000
Sub-total General	45,000
Total	345,000
Contingency (10%)	34,500
Total Incremental Capital Cost	379,500
Incremental operating cost	16,000
Total Project Cost	395,500

Table 2: Prices of chemicals

Chemicals	US \$/kg
HCFC-141b formulated systems	2.20
Cycle-pentane	2.20
MDI before and after conversion	2.20