



**United Nations
Environment
Programme**



Distr.
GENERAL

UNEP/OzL.Pro/ExCom/59/38
15 October 2009

ORIGINAL: ENGLISH

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: MEXICO

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

Foam

- Conversion from HCFC-141b and HCFC-22 in the manufacture of polyurethane rigid insulation foam for domestic refrigerators at Mabe Mexico

UNDP

PROJECT DESCRIPTION

1. On behalf of the Government of Mexico, UNDP has submitted to the 59th Meeting of the Executive Committee a project proposal for the conversion from HCFC-141b and HCFC-22 in the manufacture of polyurethane rigid insulation foam for domestic refrigerators at Mabe. The total cost of the project as submitted is US \$5,798,212 of which the Multilateral Fund share is US \$2,991,877 corresponding to 51.6 per cent national ownership of the company, plus agency support cost of US \$224,391 for UNDP. The project will be implemented in stages and is scheduled to be completed in 45 months.

2. Mabe-Mexico which was founded in 1964 is part of a multinational group of companies in a number of Article 5 countries in Central and South America and in two non-Article 5 countries. Mabe-Mexico has two manufacturing plants in Mexico, one in the city of Querétaro (which is the subject of the project proposal and has not received previous funding from the Multilateral Fund for CFC phase-out) and a new one located in the city of Celaya which is using cyclopentane.

3. The completion of the project will result in the replacement of 38.94 ODP tonnes (354.0 metric tonnes) of HCFC-141b and 16.83 ODP tonnes (306.0 metric tonnes) of HCFC-22 by cyclopentane from the production of rigid polyurethane foam used in the manufacture of domestic refrigerator cabinets and doors at the Querétaro plant. For producing the foam for refrigerator cabinets and doors the company operates four lines equipped with varied numbers of foaming fixtures serviced by 14 high pressure Cannon and Hennecke dispensers of different ages ranging from 2 to 15 years, installed between 1993 and 2007. Three lines and part of the fourth are for manufacturing foam for refrigerators using HCFC for the local market and for export to Article 5 countries. The other part of the fourth line consists of two foam machines used for manufacturing refrigerators for export to non-Article 5 countries using HFC-245fa as a blowing agent.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

4. 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, Executive Committee decision 55/43, as well as relevant guidelines and policies relating to approval of foam projects under the Multilateral Fund.

HCFC-141b consumption

5. The Secretariat drew the attention of UNDP to the discrepancies between the HCFC consumption data reported by the Government of Mexico under Article 7 of the Montreal Protocol and those indicated in the project proposal and inquired whether the higher figures in the project proposals included HCFC quantities in formulated (pre-mixed polyol) foam systems. UNDP indicated that the data in the project document was based on a survey conducted in 2007, plus data collected from a recent survey, and that all were vetted by the Ozone Unit. UNDP also indicated that the Government of Mexico is currently updating the HCFC survey for all sectors. It was also possible that data on export of fully formulated systems had not been included in the officially reported data. Reconciliation of the data will be effected as soon as the update of the HCFC survey is completed.

Status of the project for Mabe-Mexico plant at Querétaro

6. UNDP stated that although the plant at Querétaro belongs to the Mabe-Mexico Group, and the Mabe plant in Mexico City received project conversion funding from the Multilateral Fund, the Querétaro

plant has not received previous funding for CFC phase-out. Therefore, the project cannot be classified as second stage conversion.

Cost related issues

7. The Fund Secretariat identified the following four main issues relating to the calculation of the incremental cost of the project which were brought to the attention of UNDP:

- (a) Consumption of HCFCs in the baseline: Although the company used a section of the plant for production of refrigerators using HFC-245fa as a foam blowing agent to non-Article 5 countries, that part of the plant was included in the calculation of the project costs. It was noted that under those production circumstances, the conversion of that section of the plant and related foam dispensing machines and ancillary equipment was not eligible for funding;
- (b) Foam dispensers: The project is proposing to replace all high pressure foam machines older than 10 years with a new high pressure machine at a cost of US \$130,000 (40 kg/min output) and US \$150,000 (100 kg/min output), and retrofit all machines not older than 10 years at a cost of US \$70,000 per machine. The Secretariat drew the attention of UNDP to decision 25/48(b) that established the eligible incremental cost of high pressure foam machines as the cost of retrofit of the machine rather than its replacement. It advised UNDP to recalculate the incremental cost of the foaming machines accordingly;
- (c) Storage tank and premixing (chemical supplies) facilities: The project proposed to install four sets of cyclopentane tanks and premixing facilities, one for each of the production lines in operation at a total cost of US \$700,000. The Secretariat pointed out that during similar foam plant conversions to hydrocarbon it has been normal practice to consolidate such facilities for economic as well as safety reasons and advised UNDP to look into possible consolidation of the chemical supply facilities to two, with corresponding revision of the safety-related costs; and
- (d) Optimization costs: An amount of US \$60,000 had been requested as part of the incremental capital cost. The Secretariat pointed out that in view of other costs build into the calculation of the incremental operating costs and costs associated with an increase in foam density and other capital costs such as assistance of international experts, trial and training costs the amount requested constituted double counting and was ineligible for funding. Furthermore, the request for training for each specific production line should be rationalized by, for example, considering a train the trainer's approach.

8. UNDP was unable to address all of the above issues in the time available prior to the completion of this project document. It is expected that all these issues will be resolved prior to the 59th Meeting of the Executive Committee.

Impact on the environment

9. The Secretariat attempted to make a preliminary calculation of the impact on the climate of the phase-out of HCFC consumption through the Mabe project in Mexico, 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 354 metric tonnes of HCFC-141b and 306 metric tonnes of HCFC-22 will be phased-out, 428 tonnes of cyclo-pentane will be phased-in, and 786,382 tonnes of CO₂ that would have been emitted into the atmosphere would be avoided.

Substance	GWP	Tonnes/year (metric)	CO₂-eq (tonnes/year)
Before conversion			
HCFC-141b	713	354	252,402
HCFC-22	1,780	306	544,680
Total			797,082
After conversion			
HC	25	428	10,700
Net impact			(786,382)

RECOMMENDATIONS

10. Pending.
