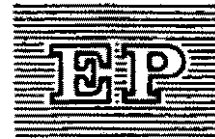




United Nations Environment Programme



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

Ninth Meeting
Montreal, 8-10 March 1993

Addendum

PROJECT PROPOSALS: ECUADOR

PROJECT EVALUATION SHEET

COUNTRY OR REGION: Ecuador

PROJECT TITLE: Conversion of Aerosol Plants to Hydrocarbon Propellants

BUDGET: US \$1,800,000

INCREMENTAL COSTS: US \$697,000

ODS PHASE-OUT: 290 MT of CFC-12

COST EFFECTIVENESS: US \$2.4/kg ODP saved¹

PROJECT DURATION: Two years

IMPLEMENTING AGENCY: The World Bank

NATIONAL COORDINATING AGENCY: Ministry of Industries, Commerce, and Fisheries (MICIP)

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. This project was first presented to the Executive Committee for consideration at its Sixth Meeting with a budget of US \$2.5 million in the context of Ecuador's Country Programme. At that meeting, the Executive Committee approved "US \$300,000 of the sum would be used to carry out feasibility studies on aerosols" (UNEP/OzL.Pro/ExCom/6/12, para. 34).
2. This proposal is the result of those feasibility studies. It is composed of 18 sub-projects, which will eliminate 290 MT of CFC-12, the total consumption of the aerosol sector in Ecuador. The documentation of this proposal followed Executive Committee guidelines and included a technical review by the OORG's sector expert.
3. Description of hydrocarbon propellant technology and associated safety and environmental measures were provided. The largest aerosol producer in Ecuador (Laboratorios Windsor) was used as an illustrative case.
4. Out of the 18 plants designated in the proposal, four were assessed in detail, three consume no CFC and one consumes only 75 kg of CFC. The inclusion of the unassessed plants

in the project cost estimate was deemed as necessary by the Bank since they have been considered as likely beneficiaries.

5. Each sub-project has training component in addition to plant conversion component where applicable.

6. The cost analysis for the major aerosol plants was presented in detail. The incremental operational cost was based on a hydrocarbon propellant price of US \$1.00/gallon in the US West Coast, plus a 50 per cent to 70 per cent increase in the cost for shipping and handling, and total incremental costs were adjusted accordingly.

7. The Secretariat commented on the proposal and received the Bank's response. The comments and response addressed issues related to incremental costs, training and the technical review of the proposal.

8. There are still some uncertainties regarding the actual price of aerosol grade hydrocarbon, which has not yet been imported in Ecuador. This and other cost items will be addressed during the final appraisal of the sub-projects.

9. The national implementing agency of the project will be the Ministry of Industries, Commerce, and Fisheries (MICIP) in co-ordination with a financial intermediary.

10. The grant agreement is projected to be ready in April 1993.

SECRETARIAT'S RECOMMENDATIONS

11. These projects are recommended for Final Approval and for funding in the amount of US \$697,000. However, this amount should be adjusted if final appraisal shows lower funding requirements.

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: Ecuador

PROJECT TITLE: Reduced CFC Insulating Foams in Refrigerator Manufacturing

BUDGET: US \$665,000

INCREMENTAL COSTS: US \$665,000

ODS PHASE OUT: 25.5 MT of CFC-11

COST EFFECTIVENESS: US \$26.1/kg ODP saved¹

PROJECT DURATION: One year

IMPLEMENTING AGENCY: The World Bank

NATIONAL COORDINATING AGENCY: Ministry of Industries, Commerce, and Fisheries (MICIP)

TECHNICAL REVIEW COMPLETED: YES X NO

SECRETARIAT'S COMMENTS

1. This project was first presented to the Executive Committee for consideration at its sixth meeting with a budget of US \$100,000 in the context of Ecuador's Country Programme. At that meeting, the Executive Committee approved "... US \$100,000 [to carry out feasibility studies] for the reduction of CFC-11 use in foam at three refrigerator manufacturing plants." (UNEP/OzL.Pro/ExCom/6/12, para. 34).
2. Proposal documentation followed the relevant guidelines approved by the Executive Committee. Detailed description of technology options as well as a technical review by the OORG's sector expert are included in the proposal.
3. After the completion of feasibility studies, the project cost increased by about 600 per cent from the cost estimated in the country programme. The high pressure foam injection machines account for about 80 per cent of the difference in cost, however, these machines carry additional benefits; they are compatible with the non-ODS likely substitutes to be used in subsequent phases.
4. This project will eliminate the 25.5 MT of CFC-11 in three domestic refrigerator plants, which accounts for 50 per cent of consumption in the rigid polyurethane foam sector in Ecuador.
5. Partial replacement of CFC-11 with carbon dioxide/water (low-CFC technology), a proven technology in developed countries, is the chosen technology for this project.

6. The incremental operational costs have not been requested, however, this cost might be compensated for with benefits from CFC reduction.

SECRETARIAT'S RECOMMENDATIONS

7. This project is recommended for Final Approval and for funding in the amount of US \$665,000.

Endnotes:

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