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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Forty-third Meeting
Geneva, 5-9 July 2004

PROJECT PROPOSAL: URUGUAY

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

Aerosol

• Phase-out of CFC consumption in the manufacture of aerosol metered dose inhalers (MDIs)	UNDP

PROJECT EVALUATION SHEET
URUGUAY

SECTOR: Aerosol (MDI) ODS use in sector (2003): 10.3 ODP tonnes

Sub-sector cost-effectiveness thresholds: US $n/a

Project Titles:

(a) Phase-out of CFC consumption in the manufacture of aerosol metered dose inhalers (MDIs)

Project Data	**Aerosol**
	Metered dose inhalers
Enterprise consumption (ODP tonnes)	10.26
Project impact (ODP tonnes)	10.00
Project duration (months)	36
Initial amount requested (US $)	450,667
Final project cost (US $):	
Incremental capital cost (a)	355,780
Contingency cost (b)	35,578
Incremental operating cost (c)	35,665
Total project cost (a+b+c)	427,023
Local ownership (%)	100
Export component (%)	0
Amount requested (US $)	427,023
Cost effectiveness (US $/kg.)	42.70
Counterpart funding confirmed?	
National coordinating agency	Comisión Tecnica Gubernamental de Ozono
Implementing agency	UNDP

Secretariat's Recommendations	
Amount recommended (US $)	
Project impact (ODP tonnes)	
Cost effectiveness (US $/kg)	
Implementing agency support cost (US $)	
Total cost to Multilateral Fund (US $)	

PROJECT DESCRIPTION

Background

1. The Government of Uruguay submitted for consideration by the Executive Committee at its 38th Meeting, a document related to the transition strategy for the elimination of CFC-based metered dose inhalers (MDIs) (UNEP/OzL.Pro/ExCom/38/17).

2. In order to implement the phase out strategy, the Government of Uruguay requested US $335,000 for the implementation of the transitional strategy and US $25,000 for the preparation of an investment project for the conversion of Laboratorios Haymann, S.A., a local manufacturer of CFC-based MDIs, to non-CFC technology.

3. Subsequently, the Executive Committee decided to approve the transitional strategy (at a total cost of US $70,000) and not to approve the request for the preparation of the project for the conversion of Haymann to non-CFC MDIs (Decisions 38/24 and 38/25).

MDI transitional strategy

4. In 1991, the annual consumption of MDIs in Uruguay was estimated at 919,000 units of which 887,000 units were CFC inhalers and 32,000 HFC-134a inhalers. More than 47 per cent of the total production was by Laboratorios Haymann, S.A.

5. The main elements of the MDI transitional strategy (as approved by the Executive Committee) are:

(a) Conversion to non-CFC MDIs at Laboratorios Haymann, S.A., which is the key element of the transitional strategy (i.e., without the conversion of the national manufacturing plant, the transitional strategy could not be implemented);

(b) Agreements with each MDI importer and/or distributor for the replacement of CFC-based MDIs;

(c) Reformulation of the legal framework to support the transitional strategy; and

(d) National awareness and education programme.

Investment project

6. Laboratorios Haymann S.A., (100 per cent locally owned), was established in 1960, and produces CFC-based MDIs both for the domestic market and for a limited amount of export. Production of CFC-MDIs, started in 1980, with an installed capacity of 100,000 units/year, using 0.2 ODP tonnes of CFCs. This capacity was increased through the purchase of additional equipment in order to respond to the increasing demand and the need to comply with the good manufacturing practices imposed by the pharmaceutical industry. By 1994, the installed capacity was 1.5 million MDIs/year (i.e., similar to the current capacity), with a CFC consumption of about 10 ODP tonnes.

7. The CFC-based MDIs produced in 2001 by the company were the following:

Product	Drug	Category	Total units
Ventiplus	Salbutamol	Short acting b2 (A)	209,300
Dilatplus	Salmeterol	Long acting b2 (E)	2,700
Cromyn	Cromoglycate	Non-steroid anti-inflammatory (C)	3,400
Inhalplus	Fluticasone	Steroid (B)	1,800
Oxiplus	Beclomethasone	Steroid (B)	17,600
Ventoxiplus	Salbutamol+beclomethasone	A+B	177,300
Fenodilat	Fenoterol	Short acting b2 (A)	16,800
Estravent	Ipratropium	Ipratropium (D)	5,900
Aeroplus	Budesonide	Steroid (B)	1,100
Serflu	Salmeterol+fluticasone	(B+E)	150
Total			**436,050**

8. Laboratorios Haymann, S.A., is proposing to reformulate the following drugs with HFA propellant: salbutamol (170,000 units), salmeterol with fluticasone (140,000 units), fenoterol (20,000 units), ipratropium (40,000 units), and fluticasone (50,000 units). In Uruguay, HFA formulations are not covered by any patent; therefore, replacement formulations for HFA MDIs will be done by the technical staff of Laboratorios Haymann, S.A.

9. The replacement technologies require different production processes as compared with those used for the existing CFC MDI products. Because of the variety of HFA formulations, the enterprise would need to fill both suspension and solution formulations using the following two processes:

(a) Preparation of a drug and propellant (i.e., HFA-134a) formulation in a single pressurized vessel that is then filled individually into canisters that already have the valves crimped into place and have been purged of air; and

(b) Preparing the formulation as a concentrate using a co-solvent (i.e., ethanol) and by then filling it into canisters that are crimped and gased in the same way as the CFC product.

10. Therefore, the project covers replacement of the existing production line (product and propellant fillers, a crimper; a propellant pump) with a new line suitable for the production of HFA-based MDIs. The total capital cost including product development is US $355,780, with the following breakdown: installation of a purger valve (US $28,764), a 20 ml diaphragm filler (US $49,599), a diaphragm pump for HFA suspensions (US $40,039); and a suspension vessel (US $76,000); equipment installation (US $26,235); and project development and stability tests (US $139,143).

11. The development of HFA formulations will take approximately six months. During this time there will be a need for a consultant with suitable experience to advise the technical staff at Haymann Laboratories on the technical aspects of this project. Once suitable formulations are developed and manufactured these will need to be tested over a 12 month period to ensure they

meet the required quality standards and performance criteria for registration in Uruguay. The project does not include any expectation of testing these products clinically.

12. The annual incremental operating costs for the conversion to non-CFC MDI technology have been estimated at US $31,050. Incremental operating costs are requested for a period of two years.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

13. Pursuant to Decision 36/9, the Secretariat submitted to the Executive Committee at its 37th Meeting a paper containing draft guidelines for MDI projects (UNEP/OzL.Pro/ExCom/37/58). Subsequently, the Executive Committee decided, *inter alia*, to take note of the draft guidelines, and to allow consideration of some projects on a case-by-case basis, taking into account the relative need of the country to have an MDI project to ensure compliance, the relative cost-effectiveness of the project and the possibility that essential use applications for MDIs might be considered by the Parties as early as 2008 (Decision 37/61).

14. At its 42nd Meeting, the Executive Committee considered a paper prepared by the Secretariat on financial planning including the funding window for accelerated phase-out and maintaining momentum and the status of forward commitments (UNEP/OzL.Pro/ExCom/42/4 and Corrs. 1 and 2), which provided guidance on the funding allocations for the remainder of the triennium, 2004 and 2005. Subsequent to a discussion, the Executive Committee decided, *inter alia,* to note that all projects in the bilateral and implementing agencies' 2004 business plans for accelerating phase-out and maintaining momentum could be considered for funding in 2004 (Decision 42/3 (c)). At the same Meeting, the Executive Committee decided to endorse the 2004 - 2006 business plan of UNDP (UNEP/OzL.Pro/ExCom/42/8 and Corr.1) (Decision 42/8 (a)). UNDP's business plan included a project proposal for the phase-out of CFCs used in MDIs in Uruguay.

15. The Secretariat noted that the MDI transitional strategy in Uruguay approved at the 38th Meeting is inter-linked with the investment project for the phase-out of CFCs at Laboratorios Haymann. The Government is proposing the conversion of the CFC MDI products to HFC-134a by 2007.

16. Presently, there are no patents in Uruguay for HFA MDI formulations. The replacement formulations for HFA MDIs would be developed locally by the staff of Laboratorios Haymann. Therefore, a technology transfer or a license agreement would not be required for implementing the investment project. In this regard, costs associated with the technology transfer and/or license agreement were not requested.

17. The current production baseline consists of a manual operating system typically manufacturing batch sizes of 3,000 units. The capital cost associated with the conversion of the plant entails the installation of new production line, with an installed capacity of 1.44 million units/year. In this regard, the Secretariat discussed with UNDP issues related to technology upgrade and increased capacity. Subsequently, the Secretariat was advised that the

HFA formulations that the enterprise would need to fill (i.e., suspension and solution formulations) require a more flexible filling system than is currently used for the CFC-based MDIs. However, the capacity of the new equipment would be similar to that currently installed. Furthermore, the proposed equipment is the lowest speed manual operation equipment available on the market.

18. In the review of the incremental operating costs the Secretariat noted that incremental operating costs for the conversion to non-CFC MDI technology were calculated only on the basis of the differences in prices between valves, cans and propellant. On this basis, annual operating costs associated with the production of salbutamol, fenoterol, and ipatropium, amounted to US $31,050. For the other two products (salbutamol with beclomethasone, and fluticasone) operating costs were negative (i.e., savings), but had not been included. When considering the operating costs and savings of all the formulations, annual operating savings would amount to US $9,000.

19. Upon a request for a clarification on the above issue, UNDP reported that in the calculation of the operating costs, the difference in the price of the drugs was not considered as in most of the HFA products the drug used is the same. However, since there is no suitable replacement for the combined formulation of salbutamol with beclomethasone (140,000 MDI units/year), a new formulation would need to be used (combination of salmeterol with fluticasone). The prices of the drugs in the new formulation are very high and would have resulted in annual operating costs for this product of US $687,700. However, UNDP advised that these costs will not be claimed by Laboratorios Haymann. Subsequently, the total incremental operating costs of the project were calculated on the basis of the relevant operating costs and savings for the other four products. These amount to US $20,550 per year or US $35,665 NPV for a two year period.

20. The cost of the project, as it has been agreed between the Secretariat and UNDP, amounts to US $427,023. The cost-effectiveness of the project is US $42.70/kg. The only other MDI project so far approved by the Executive Committee, for the phase-out CFCs used for the production of MDIs in Cuba, had a cost-effectiveness of US $54.63/kg.

RECOMMENDATION

21. The Executive Committee may wish to consider approval of the project, at a total cost of US 427,023 plus agency support costs of US $32,027 for UNDP based on the above comments.

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