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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
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PROJECT PROPOSALS: ALGERIA

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

Aerosol

- Phase out of CFC11/CFC12 by conversion to hydrocarbons technology in the manufacture of aerosols at Floreal UNIDO
- Phase out of CFC-11/CFC-12 by conversion to hydrocarbon technology in the manufacture of aerosols at company Saco UNIDO

Foam

- Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Matelas Mondial UNIDO
- Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Orania Mousse Ameublement (OMA) UNIDO

PROJECT EVALUATION SHEET ALGERIA

SECTOR: Aerosol ODS use in sector (1998): 375 ODP tonnes

Sub-sector cost-effectiveness thresholds: n/a

Project Titles:

- (a) Phase out of CFC11/CFC12 by conversion to hydrocarbons technology in the manufacture of aerosols at Floreal
- (b) Phase out of CFC-11/CFC-12 by conversion to hydrocarbon technology in the manufacture of aerosols at company Saco

| Project Data | Filling plant | |
|-------------------------------------|--------------------------------------|---------|
| | Floreal | Saco |
| Enterprise consumption (ODP tonnes) | 17.00 | 16.00 |
| Project impact (ODP tonnes) | 18.10 | 19.00 |
| Project duration (months) | 12 | 12 |
| Initial amount requested (US \$) | 107,945 | 106,691 |
| Final project cost (US \$): | | |
| Incremental capital cost (a) | 133,000 | 165,000 |
| Contingency cost (b) | 13,300 | 16,500 |
| Incremental operating cost (c) | -38,355 | -74,809 |
| Total project cost (a+b+c) | 107,945 | 106,691 |
| Local ownership (%) | 100% | 100% |
| Export component (%) | 0% | 0% |
| Amount requested (US \$) | 107,945 | 106,691 |
| Cost effectiveness (US \$/kg.) | 5.96 | 5.62 |
| Counterpart funding confirmed? | n/a | n/a |
| National coordinating agency | Secretariat d'Etat a l'Environnement | |
| Implementing agency | UNIDO | UNIDO |

| Secretariat's Recommendations | | |
|--|--------|--------|
| Amount recommended (US \$) | 77,145 | 73,691 |
| Project impact (ODP tonnes) | 18.10 | 19.00 |
| Cost effectiveness (US \$/kg) | 4.26 | 3.88 |
| Implementing agency support cost (US \$) | 10,029 | 9,580 |
| Total cost to Multilateral Fund (US \$) | 87,174 | 83,271 |

PROJECT DESCRIPTION

- (a) Phase out of CFC11/CFC12 by conversion to hydrocarbons technology in the manufacture of aerosols at Floreal**
- (b) Phase out of CFC-11/CFC-12 by conversion to hydrocarbon technology in the manufacture of aerosols at company Saco**

1. The Algeria country programme identified two large enterprises (Asmidal and Enad) and 90 small plants manufacturing aerosol products, with a total CFC consumption of 559 tonnes. The progress report on the implementation of the country programme submitted by the Government of Algeria to the Fund Secretariat reported a consumption of 370 ODP tonnes of CFC in the aerosol sector in 1998.

2. The Executive Committee has approved seven investment projects for the phase out of 343.5 tonnes of CFCs in this sector and allocated US \$1,306,884 for their implementation. The progress report (as of December 1998) submitted by UNIDO to the 28th Meeting of the Executive Committee reported that six projects have already been completed, with a total phase out of 304 ODP tonnes, and US \$964,734 disbursed.

3. The Government of Algeria is submitting two additional projects which would lead to elimination of 37.1 tonnes of CFCs.

4. Based on the CFC baseline for Algeria's compliance with the Montreal Protocol, the elimination of 37.1 ODP tonnes would represent 2.69 per cent of the baseline.

5. The projects are for the replacement of CFCs with hydrocarbon propellant (HAP) used in manufacturing different sizes of deodorant, shaving foam and perfume cans (460,000 cans /year by Floreal and 340,000 cans/year by Saco).

6. The aerosol filling process under operation in Floreal utilises a Coster rotary indexing machine with two filling heads, one crimping head and two propellant gas filling heads, one crimping machine, a volumetric filling machine and a pneumatic pump. The filling operations in Saco utilises Pamasol machines for gas filling, liquid filling and crimping and two propellant gas pumps.

7. Conversion to HAPs technology entails, at each plant, installation of a semi-automatic gas filling machine including safety devices, a manually-operated water bath for testing filled cans, and a HAP purification and gas detection system. Conveyor systems, explosion-proof lighting and ventilation systems are also requested.

8. Technical assistance will be provided for performance and supervision of engineering designs, equipment installation and commissioning of the plant. Training in production, quality control and safety procedures will also be provided.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The original amounts requested in the projects were US \$107,945 for Floreal and US \$106,691 for Saco, corresponding to cost effectiveness values of US \$5.96/kg and US \$5.62/kg, respectively. These values are over the threshold for the sector (US \$4.40/kg).

2. The Secretariat discussed with UNIDO the increase in production capacity of the proposed filling machine compared to the baseline, as well as the level of funding requested for a manual water bath, and gas detection and explosion proof and lighting systems, which were higher than similar requests elsewhere. Thus, UNIDO agreed to adjust the capital costs of the proposals accordingly (US \$28,000 less for Floreal and US \$30,000 for Saco).

3. The adjusted capital cost and operational savings (NPV for four years) of the projects were US \$115,500 and (US \$38,355), respectively for Floreal, and US \$153,500 and (US \$79,809), respectively for Saco. The corresponding cost effectiveness values were US \$4.26/kg and US \$3.88/kg.

RECOMMENDATION

1. The Fund Secretariat recommends blanket approval of the projects with associated support costs at the funding level shown in the table below:

| | Project Title | Project Cost (US\$) | Support Cost (US\$) | Implementing Agency |
|-----|---|------------------------|------------------------|------------------------|
| (a) | Phase out of CFC11/CFC12 by conversion to hydrocarbons technology in the manufacture of aerosols at Floreal | 77,145 | 10,029 | UNIDO |
| (b) | Phase out of CFC-11/CFC-12 by conversion to hydrocarbon technology in the manufacture of aerosols at company Saco | 73,691 | 9,580 | UNIDO |

**PROJECT EVALUATION SHEET
ALGERIA**

SECTOR: Foam ODS use in sector (Baseline): 625 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible Slabstock US \$6.23/kg

Project Titles:

- (a) Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Matelas Mondial
- (b) Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Orania Mousse Ameublement (OMA)

| Project Data | Flexible slabstock | Flexible slabstock |
|-------------------------------------|--------------------------------------|--------------------|
| | Matelas Mondial | OMA |
| Enterprise consumption (ODP tonnes) | 20.00 | 18.00 |
| Project impact (ODP tonnes) | 20.00 | 18.00 |
| Project duration (months) | 12 | 12 |
| Initial amount requested (US \$) | 116,736 | 109,977 |
| Final project cost (US \$): | | |
| Incremental capital cost (a) | 106,500 | 114,000 |
| Contingency cost (b) | 10,650 | 11,400 |
| Incremental operating cost (c) | -18,164 | -24,923 |
| Total project cost (a+b+c) | 98,986 | 100,477 |
| Local ownership (%) | 100% | 100% |
| Export component (%) | 0% | 0% |
| Amount requested (US \$) | 98,986 | 100,477 |
| Cost effectiveness (US \$/kg.) | 4.95 | 5.53 |
| Counterpart funding confirmed? | | |
| National coordinating agency | Secretariat d'Etat a l'Environnement | |
| Implementing agency | UNIDO | UNIDO |

| Secretariat's Recommendations | | |
|--|---------|---------|
| Amount recommended (US \$) | 97,986 | 99,477 |
| Project impact (ODP tonnes) | 20.00 | 18.00 |
| Cost effectiveness (US \$/kg.) | 4.95 | 5.53 |
| Implementing agency support cost (US \$) | 12,738 | 12,932 |
| Total cost to Multilateral Fund (US \$) | 110,724 | 112,409 |

PROJECT DESCRIPTION

- (a) **Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Matelas Mondial**
- (b) **Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Orania Mousse Ameublement (OMA)**

Sector Background

| | | |
|---|-----------------|------------|
| - Latest available total ODS consumption (1998) | 1,784.5 | ODP tonnes |
| - Baseline consumption* of Annex A Group I substances (CFCs) | 1,377.1 | ODP tonnes |
| - 1998 consumption of Annex A Group I substances | 1,549.2 | ODP tonnes |
| - Baseline consumption of CFCs in foam sector | 625 | ODP tonnes |
| - 1998 consumption of CFCs in foam sector | 377 | ODP tonnes |
| - Funds approved for investment projects in foam sector as of March 1999 (27 th Meeting) | US \$ 2,142,729 | |
| - Quantity of CFC to be phased out in foam sector as of March 1999 (27 th Meeting) | 465 | ODP tonnes |
| - Quantity of CFC phased out in foam sector as of March 1999 (27 th Meeting) | 0 | ODP tonnes |

*Baseline consumption of Annex A controlled substances refers to average of the consumption for the years 1995-1997 inclusive.

Other relevant information:

- Two projects are being submitted to the 28th Executive Committee Meeting in the foam sector. When approved and implemented 38 ODP tonnes of CFC-11 will be phased out.

Impact of the Projects

- The 38 tonnes to be phased out constitutes 2.8 per cent of Algeria's baseline consumption of Annex A Group I substances and 6.1 per cent of its foam sector baseline consumption.

- (a) **Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Matelas Mondial**

- Matelas Mondial used 20 tonnes of CFC-11 to manufacture 400 tonnes of flexible slabstock polyurethane foam blocks for the furniture industry. The production is to be converted for the use of Methylene Chloride (MC) technology. The company will install a MC storage and metering system on its discontinuous production line (US \$35,000), a storage and metering systems for a softening additive (US \$14,000), will upgrade the enclosure and ventilation of the production line and hall (US \$40,000), and will install MC detectors and safety devices (US \$10,000) for the flexible foam machine. Other costs include trials (US \$10,000) and technology transfer (US \$15,000). The incremental operating benefits of MC use (US \$18,164) are deducted from the requested grant.

(b) Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane foam at Orania Mousse Ameublement (OMA)

4. Orania Mousse Ameublement (OMA) used 18 tonnes of CFC-11 also to manufacture 400 tonnes of flexible slabstock polyurethane foam block for the furniture industry. The production is to be converted for the use of Methylene Chloride (MC) technology. The company will install a MC storage and metering system on a block foam production line (US \$35,000), a storage and metering systems for a softening additive (US \$14,000), will upgrade the enclosure and ventilation of the production line and hall (US \$40,000), and will install MC detectors and safety devices (US \$10,000) for the flexible foam machine. Other costs include trials (US \$10,000) and technology transfer (US \$15,000). The incremental operating savings of MC use (US \$24,923) are subtracted from the requested grant.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The cost of methylene chloride metering system in the two projects for US \$20,000 each was revised, consistent with the cost in other projects. The technology transfer costs were also revised in view of the volume of similar projects approved for the country and the level of penetration of the methylene chloride technology world-wide. The new costs are US \$15,000 each for the metering system and US \$10,000 each for technology transfer.

2. Where the company currently does not have a CFC tank but meters from drums, 50% of the cost of installing a methylene chloride tank would be borne by the company, in view of the upgrade in production efficiency. The cost of replacement of CFC storage tank at Matelas Mondial should, therefore, be US \$7,500 instead of US \$15,000.

3. Therefore the project costs of the each company became:

| | Matelas Mondial | Orania Mousse |
|---------------------------------|-----------------|---------------|
| Incremental capital cost | US 106,500 | US 114,000 |
| Contingency | US 9,650 | US 10,400 |
| Incremental operational savings | US 18,164 | US 24,923 |
| Eligible grant | US 97,986 | US 99,477 |

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the two projects with the level of funding and associated support costs shown in the table below.

| | Project Title | Project Cost (US\$) | Support Cost (US\$) | Implementing Agency |
|-----|---|--------------------------------|--------------------------------|--------------------------------|
| (a) | Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Matelas Mondial | 97,986 | 12,738 | UNIDO |
| (b) | Phasing out of CFC-11 by conversion to methylene chloride in the manufacture of flexible polyurethane slabstock foam at Orania Mousse Ameublement (OMA) | 99,477 | 12,932 | UNIDO |