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

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

Aerosol

•	Conversion from CFC-11/12, CFC-12, CFC-113 and MCF into HAPs and CO2 for technical aerosols at Beta	World Bank

Fumigant

•	Phase-out methyl bromide in the dried fig sector in Turkey	World Bank

Foam

•	Phasing out CFC-11 in manufacturing of flexible PU slabstock foam through the use of liquid Co2 blowing technology at Espol Sunger Company	UNIDO

Refrigeration

• Incremental operating costs – Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for commercial refrigerators at Klimasan	World Bank
• Incremental operating costs – Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for domestic refrigerators at Profilo	World Bank

PROJECT EVALUATION SHEET
TURKEY

SECTOR: Aerosol ODS use in sector (1998): 31.2 ODP tonnes

Sub-sector cost-effectiveness thresholds: Hydrocarbon US $4.40/kg

Project Titles:
(a) Conversion from CFC-11/12, CFC-12, CFC-113 and MCF into HAPs and CO2 for technical aerosols at Beta

Project Data	**Filling plant**
	Beta
Enterprise consumption (ODP tonnes)	31.20
Project impact (ODP tonnes)	31.20
Project duration (months)	12
Initial amount requested (US $)	137,456
Final project cost (US $):	
Incremental capital cost (a)	170,500
Contingency cost (b)	
Incremental operating cost (c)	25,179
Total project cost (a+b+c)	195,679
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US $)	137,456
Cost effectiveness (US $/kg.)	4.40
Counterpart funding confirmed?	Yes
National coordinating agency	Technology Development Foundation of Turkey
Implementing agency	IBRD

Secretariat's Recommendations	
Amount recommended (US $)	137,456
Project impact (ODP tonnes)	31.20
Cost effectiveness (US $/kg)	4.40
Implementing agency support cost (US $)	8,247
Total cost to Multilateral Fund (US $)	145,703

PROJECT DESCRIPTION

Conversion from CFc-11/12, CFC-12, CFC-113 and MCF into HAPS and CO2 for technical aerosols at Beta

1. The Government of Turkey is submitting the first project in the aerosol sector that would lead to the phaseout of 31.2 tonnes of CFCs and MCF. The company produces various sizes of technical aerosol products (128,600 cans/year of contact spray, degreaser, mold release, welding crack test, rust remover).

2. The aerosol filling process initially used a manual filling aerosol line by Coster (1985) and two Pamasol filling stations (1992). In 1998, the enterprise replaced the Coster line by a new Hitit Makina filling line, since its was not safe for filling with hydrocarbon propellants (HAPs).

3. The enterprise has converted to HAPs and CO_2 technologies. Conversion included installation of a gas filling machine for HAPs (retroactive financing modality), a manual water bath for testing filled cans, HAP storage and purification systems, gas detectors and fire control systems, modification of electrical systems and ventilation system.

4. Technical assistance will be provided for trial production and training safety audit.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The country programme reported that ODS consumption in the aerosol sector was phased out in 1993. However, the progress report on the implementation of the country programme submitted by the Government of Turkey to the Fund Secretariat in June 1999, reported a consumption of 30 tonnes of CFCs in the aerosol sector in 1997 (1995-1997 baseline of 28.3 tonnes). The consumption reported in the project proposal has been verified by the Ozone Unit.

2. The World Bank informed the Secretariat that, based on discussions with the Ozone Unit, Beta Aerosol is the only enterprise that has been identified in Turkey as using CFC-12 propellant; however, some specialized aerosol companies (pharmaceutical products) could be in operation.

3. The Secretariat discussed with the World Bank the feasibility of retrofitting the Coster filling line to fill with HAPs. The World Bank reported that the enterprise assessed the Coster unit and concluded that it was not safe for filling with LPG propellant and that retrofitting was not an economically viable option. The capacity of the new Hitit Makina line is similar to the capacity of the Coster line and thus the company has not increased its production capacity.

4. Contingency costs associated with the equipment purchased by the company (for retroactive financing) were not requested. The agency support costs were also adjusted according to decision 29/72 (at 6 per cent for retroactive projects).

5. The Secretariat also discussed issues related to formulations of aerosol products. The World Bank provided a copy of the main formulations currently used in the production of aerosol products.

6. The adjusted capital costs and operational costs (NPV for four years) of the project were US $170,500 and US $25,179, respectively. The total cost of the project is US $195,679; however, because of the threshold value (US $4.40/kg), the total eligible grant is US $137,456. The company has agreed to co-finance the conversion.

7. The implementing agency support costs are US $8,247 calculated at 6 per cent of the total grant.

RECOMMENDATIONS

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

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Conversion from CFC-11/12, CFC-12, CFC-113 and MCF into HAPs and CO2 for technical aerosols at Beta	137,456	8,247	IBRD

PROJECT EVALUATION SHEET
TURKEY

SECTOR: Foam ODS use in sector (1998): 2,210 ODP tonnes

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

Project Titles:

(a) Phasing out CFC-11 in manufacturing of flexible PU slabstock foam through the use of liquid Co2 blowing technology at Espol Sunger Company

Project Data	**Flexible slabstock**
	Espol
Enterprise consumption (ODP tonnes)	95.00
Project impact (ODP tonnes)	95.00
Project duration (months)	24
Initial amount requested (US $)	552,297
Final project cost (US $):	
Incremental capital cost (a)	615,000
Contingency cost (b)	56,500
Incremental operating cost (c)	-119,203
Total project cost (a+b+c)	552,297
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US $)	552,297
Cost effectiveness (US $/kg.)	5.81
Counterpart funding confirmed?	
National coordinating agency	Ministry of Environment
Implementing agency	UNIDO

Secretariat's Recommendations	
Amount recommended (US $)	552,297
Project impact (ODP tonnes)	95.00
Cost effectiveness (US $/kg)	5.81
Implementing agency support cost (US $)	70,753
Total cost to Multilateral Fund (US $)	623,050

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1998)	4,960.50 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	3,805.30 ODP tonnes
- Consumption of Annex A Group I substances for the year 1998	3,985.00 ODP tonnes
- Baseline consumption of CFCs in foam sector	2,344.70 ODP tonnes
- Consumption of CFCs in foam sector in 1998	2,210.00 ODP tonnes
- Funds approved for investment projects in foam sector as of end of 1999	US $9,404,521.00
- Quantity of CFC to be phased out in investment projects in foam sector as of end of 1999	1,621.65 ODP tonnes
- Quantity of CFC phased out in investment projects in foam sector as of end of 1999	1,095.39 ODP tonnes
- Quantity of CFC to be phased out in investment projects in foam sector approved in 1999	204.10 ODP tonnes
- Funds approved for investment projects in the foam sector in 1999	US $1,356,089.00

Flexible Slabstock

Espol

1. Espol uses 95 ODP tonnes of CFC-11 per year (average 1997-1999) in the production of flexible polyurethane slabstock foam for mattresses and furniture. Under this project, the production is to be converted to liquid carbon dioxide technology. The project includes the retrofitting of the existing Maxfoam machine and the installation of supplementary equipment at a total cost of US $455,000. Other costs include trials (US $15,000), related civil works (US $25,000), licensing, consultancy services and training (US $120,000). There will be incremental operational savings of US $119,203 calculated over four years.

Impact of the project

2. 95 ODP tonnes will be phased out when the project is completed. This will eliminate 2.5% of Turkey's baseline consumption of Annex A Group I substances.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Fund Secretariat and UNIDO agreed on the project costs.

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the Espol Sunger project with the level of funding and associated support cost indicated below.

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Phasing out CFC-11 in manufacturing of flexible PU slabstock foam through the use of liquid Co2 blowing technology at Espol Sunger Company	552,297	70,753	UNIDO

PROJECT EVALUATION SHEET
TURKEY

SECTOR: Refrigeration ODS use in sector (1998): 1,799 ODP tonnes

Sub-sector cost-effectiveness thresholds: Commercial US $15.21/kg
Domestic US $13.76/kg

Project Titles:

(a) Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for commercial refrigerators at Klimasan
(b) Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for domestic refrigerators at Profilo

Project Data	**Commercial**	**Domestic**
	Klimasan	**Profilo**
Enterprise consumption (ODP tonnes)	26.40	279.29
Project impact (ODP tonnes)	26.40	279.29
Project duration (months)	12	12
Grant already approved capital cost (a)	690,903	1,578,000
Incremental operating cost (b)	167,689	672,250
Total project cost (a) + (b) :	858,592	2,250,250
Local ownership (%)	75%	34%
Export component (%)	0%	20%
Amount requested (US $)	167,689	672,250
Cost effectiveness (US $/kg.)	31.15	8.05
Implementing agency support cost (US$)	21,780	83,997
National coordinating agency	Technology Development Foundation of Turkey	
Implementing agency	IBRD	

Secretariat's Recommendations		
Amount recommended (US $)	128,230	264,154
Project impact (ODP tonnes)		
Cost effectiveness (US $/kg)	31.03	6.59
Implementing agency support cost (US $)	16,670	34,340
Total cost to Multilateral Fund (US $)	144,900	298,494

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1998)	4,960.50 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	3,805.30 ODP tonnes
- Consumption of Annex A Group I substances for the year 1998	3,985.00 ODP tonnes
- Baseline consumption of CFCs in refrigeration sector	1,452.10 ODP tonnes
- Consumption of CFCs in refrigeration sector in 1998	1,799.00 ODP tonnes
- Funds approved for investment projects in refrigeration sector as of March 2000 (30th Meeting)	US$8,481,530
- Quantity of CFC to be phased out in investment projects in refrigeration sector as of March 2000 (30th Meeting)	1,173.40 ODP tonnes

1. The domestic refrigeration sub-sector in Turkey is comprised of four major manufacturers. Two companies (Arcelik and Profilo) have received assistance from the Multilateral Fund, and the other two companies are totally owned by non-Article 5 countries. The commercial refrigeration sub-sector consists of six major manufacturers, of which five have been funded by the Multilateral Fund and some 330 SMEs.

2. In total, seven projects have been approved by the Executive Committee in Turkey to phase out 1,173 ODP tonnes, including conversion of two major compressor manufacturers.

(a) Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for commercial refrigerators at Klimasan

(b) Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for domestic refrigerators at Profilo

3. The incremental capital costs of the two projects were approved at the 15th Meeting (690,903 for Klimasan and 1,578,000 for Profilo), on the understanding that their incremental operating costs will be requested for one year duration later on. The World Bank is submitting two proposals to request the incremental operating costs associated with the conversion from CFC-11 and CFC-12 to cyclopentane and HFC-134a for one year duration in Klimasan and Profilo. The basis for the IOC calculation is the last year (1993) with full production with CFCs, and includes incremental costs for compressors, and higher cost of components and chemicals, including lubricating oil in the case of Profilo.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The proposals were submitted to the 25th Meeting requesting approval of IOC for the two companies in accordance with a decision taken by the Executive Committee at its 15th Meeting,

which allowed compensation for one year of IOC when requested after conversion from ODS technology. All components of IOC were agreed with the World Bank except those associated with compressors which could not be calculated pending a decision on determination of the number of eligible units in countries that received Multilateral Fund funding for conversion of their compressor manufacturers. The decision was taken at the 26th Meeting (Decision 26/36), which provided the basis for determining the number of eligible units.

2. The proposals submitted to the 31st Meeting did not follow Decision 26/36 to determine the number of compressors eligible for inclusion in the IOC. The proposals also included incremental costs of lubricating oil in the calculation of IOC.

3. The Secretariat discussed the two issues with the World Bank.

4. The issue of the eligible number of units to be used in IOC calculation was discussed with the World Bank, and was subsequently resolved after agreeing on the discounting factors that reflected the funding approved for compressor manufacturers conversion in Turkey.

5. Since the lubricating oil is part of the compressor conversion, and based on Decision 26/36, paragraph 1, which disallows compensation for IOC of compressor conversion, the request for IOC for lubricating oil was deemed ineligible. Additionally, the enterprise concerned (Profilo) had already received ICC for lubricating oil charging equipment as part of the project approved for it at the 13th Meeting.

6. On the basis of Decision 26/36, the cost of lubricant is ineligible for funding to Profilo.

7. The IOC costs of the two proposals were adjusted accordingly.

8. The costs agreed with the World Bank were adjusted further to reflect the ownership of non-Article 5 countries and the export to non-Article 5 countries (in case of Profilo).

9. The overall cost-effectiveness of Klimasan is US $31.15/kg ODP, which exceeds the cost-effectiveness threshold for the commercial refrigeration sector established by the Executive Committee at US $15.21/kg ODP phased out. The Executive Committee at its 25th Meeting decided that commitments made at the time of approval should be adhered to and, on that basis the proposal for two of the projects (Klimasan and Profilo) could be approved, subject to any other specific issues to be taken up when the projects were considered individually (Decision 25/16).

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the commercial refrigeration projects from the World Bank with the funding levels and associated support costs as indicated below.

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for commercial refrigerators at Klimasan	128,230	16,670	IBRD
(b)	Incremental operating costs - Conversion from CFC-11 and CFC-12 into cyclopentane and HFC-134a for domestic refrigerators at Profilo	264,154	34,340	IBRD