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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Thirty-second Meeting  
Ouagadougou, 6-8 December 2000

**PROJECT PROPOSAL: JORDAN**

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

Aerosol:

- Phase-out of CFC-12 in the manufacture of hair lacquers by conversion to hydrocarbon propellant at Jordan Tunisian Chemical Company

UNIDO

Halon:

- Terminal halon 1211 and halon 1301 phaseout umbrella project for fire equipment manufacturers and suppliers in Jordan converting to ABC powder, CO<sub>2</sub>, HFC-227ea and inert gases as substitutes

World Bank

**PROJECT EVALUATION SHEET  
JORDAN**

SECTOR: Aerosol ODS use in sector (1999): 40 ODP tonnes

Sub-sector cost-effectiveness thresholds: Filling plant US \$4.40/kg

**Project Titles:**

- (a) Phase-out of CFC-12 in the manufacture of hair lacquers by conversion to hydrocarbon propellant at Jordan Tunisian Chemical Company

Project Data	Filling plant	
	Jordan Tunisian	
Enterprise consumption (ODP tonnes)		12.00
Project impact (ODP tonnes)		12.00
Project duration (months)		26
Initial amount requested (US \$)		52,800
Final project cost (US \$):		
Incremental capital cost (a)		73,500
Contingency cost (b)		7,350
Incremental operating cost (c)		-12,306
Total project cost (a+b+c)		68,544
Local ownership (%)		100%
Export component (%)		0%
<b>Amount requested (US \$)</b>		52,800
Cost effectiveness (US \$/kg.)		4.40
Counterpart funding confirmed?		Yes
National coordinating agency	Ozone Project Preparation & Implementation Unit	
Implementing agency	UNIDO	

<b>Secretariat's Recommendations</b>	
Amount recommended (US \$)	52,800
Project impact (ODP tonnes)	12.00
Cost effectiveness (US \$/kg)	4.40
Implementing agency support cost (US \$)	6,864
Total cost to Multilateral Fund (US \$)	59,664

## PROJECT DESCRIPTION

(a) Phaseout of CFC-12 in the manufacture of hair lacquers by conversion to hydrocarbon propellant at Jordan Tunisia Chemical Company

1. In 1999, the total ODS consumption in the aerosol sector was 40 tonnes as reported in the Progress of Implementation of Country Programme (24 April 2000). The Executive Committee has already approved seven investment projects for the phase out of 325 tonnes of CFCs used in the manufacturing of aerosol products and has allocated about US \$954,000 for their implementation. In addition, the Committee approved at its 7<sup>th</sup> Meeting a project proposal for LPG purification to be used in aerosol products and allocated US \$700,000 to the World Bank for its implementation

2. There are two aerosol plants that are still producing aerosol products using CFC-propellant: Jordan Tunisia Chemical Company and Arab Centre for Pharmaceuticals and Chemicals. Jordan Tunisia Chemical Company produces hair lacquer (100,000 cans/year) and Arab Centre for Pharmaceuticals and Chemicals produces different pharmaceutical aerosols (312,994 cans/year) such as lignosol, septisol, neosol, multisol and meconasol. The total CFC consumption is 33 tonnes.

3. The Government of Jordan has only submitted the request for the conversion of the Jordan Tunisia Chemical Company to hydrocarbon aerosol grade propellant (HAP) technology. A project for the conversion of the Arab Centre for Pharmaceuticals and Chemicals plant will be submitted to a later meeting of the Committee.

4. Conversion entails installation of a gas filler machine with a propellant handling system and portable gas detectors, a conveyor system, retrofit of process pump, a manual water bath for testing filled cans and construction of an open air filling room.

5. Technical assistance will be provided for performance and supervision of engineering designs, installation of equipment and commissioning of the plant and training.

## SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

### COMMENTS

1. The Secretariat pointed out that benefits realized from the LPG purification project (approved at the 7<sup>th</sup> Meeting) were not included in the calculation of the eligible incremental costs of the project, as was done for the aerosol projects submitted and approved at the 20<sup>th</sup> Meeting. UNIDO agreed to take into consideration the LPG purification project in the calculation of incremental operating savings.

2. The calculation of the total operating savings in the project has been based on three components: (i) the difference in costs associated with the formulations based on CFCs or HAPs, (ii) increase in maintenance costs (at 5% of capital investment) due to the use of HAP, and (iii)

increase in energy consumption due to the hot water bath and additional ventilation. The Secretariat pointed out that the incremental costs associated with maintenance are very difficult to quantify and not all of them are incremental (for example, old pieces of equipment which will be replaced with new equipment; capital costs associated with racks, OAFR, and lighting). Furthermore, the increase in energy consumption due to the use of water baths is not incremental, since water baths should be in the baseline of any aerosol plant, irrespective of the propellant used. Thus, operating costs/savings were adjusted accordingly (from US \$1,273 to US \$12,306).

## RECOMMENDATION

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

	<b>Project Title</b>	<b>Project Funding (US\$)</b>	<b>Support Cost (US\$)</b>	<b>Implementing Agency</b>
(a)	Phase-out of CFC-12 in the manufacture of hair lacquers by conversion to hydrocarbon propellant at Jordan Tunisian Chemical Company	52,800	6,864	UNIDO

**PROJECT EVALUATION SHEET  
JORDAN**

SECTOR: Halon ODS use in sector (1999): 255 ODP tonnes  
Sub-sector cost-effectiveness thresholds: Fire Protection US \$1.48/kg

**Project Titles:**

- (a) Terminal halon 1211 and halon 1301 phaseout umbrella project for fire equipment manufacturers and suppliers in Jordan converting to ABC powder, CO<sub>2</sub>, HFC-227ea and inert gases as substitutes

Project Data	Extinguisher/fixed system	
	Terminal umbrella	
Enterprise consumption (ODP tonnes)		421.80
Project impact (ODP tonnes)		421.80
Project duration (months)		38
Initial amount requested (US \$)		982,300
Final project cost (US \$):		
Incremental capital cost (a)		563,000
Contingency cost (b)		
Incremental operating cost (c)		
Total project cost (a+b+c)		563,000
Local ownership (%)		100%
Export component (%)		0%
<b>Amount requested (US \$)</b>		563,000
Cost effectiveness (US \$/kg.)		1.33
Counterpart funding confirmed?		
National coordinating agency	Ozone Unit	
Implementing agency	IBRD	

<b>Secretariat's Recommendations</b>	
Amount recommended (US \$)	563,000
Project impact (ODP tonnes)	421.80
Cost effectiveness (US \$/kg)	1.33
Implementing agency support cost (US \$)	71,930
Total cost to Multilateral Fund (US \$)	634,930

## PROJECT DESCRIPTION

1. The project is part of the overall strategy for halon phase out in Jordan. This terminal umbrella project will reduce the national consumption of halons from the present consumption to 0 in 2003. The document indicated a current consumption average for 1998 and 1999 of 421.8 ODP tonnes. The requested funding is based on Decision 25/50 regarding terminal umbrella projects. Jordan will develop and implement the necessary policies and regulatory measures to prevent future import of halons from the end of 2003. The project will cover all remaining halon equipment manufacturing enterprise in Jordan. In addition to the listed companies, there are a number of very small fire equipment companies located outside the Amman area, which have not been included by the halon survey. This project will cover these companies through a workshop and no additional funding will be requested in this sector.

2. Standard capital costs are requested for extinguisher manufacturers conversion to ABC powder and CO<sub>2</sub> fire extinguishers production and for the conversion of halon system manufacturers and suppliers to non ODS fire extinguishing agents. Funding for capital costs, technical assistance and training to the halon fire equipment manufacturers and suppliers are requested based on typical standard costs for the industry. In accordance with Decision 25/50 regarding terminal umbrella projects for a larger number of smaller enterprises, incremental operating costs and savings are not calculated nor claimed.

3. A Halon Management and Banking project was approved at the 29<sup>th</sup> meeting of the Executive Committee. The Government will ban import of halons not later than by the end of 2003 through the existing ODS import/export control. The ban will be enforced by customs authorities, which will receive the necessary training for its enforcement. The regulation will, however, allow the use of recycled halons for existing halon fire fighting equipment so that existing equipment do not need to be replaced but can remain in place until end of its technical lifetime.

4. The Civil Defense in Jordan will have a key role in the implementation of the halon phase-out regulation as it relates to fire safety in general. It will issue and enforce the necessary supporting regulations and guidance controlling installation of new fire extinguishing systems and sale of new halon fire equipment. Civil Defense will play a key role in the implementation of the halon phase-out strategy for Jordan as 1) all fire equipment in Jordan are certified by the Civil Defense, 2) It issues and enforces fire safety codes, and 3) it conducts inspections to ensure that safety requirements are followed.

5. The Jordan fire equipment market consist of a small number of larger companies which covers the full range of fire protection equipment and a large number of very small companies. Two of the larger fire equipment companies have their own complete fire extinguisher production, including cylinder production. The smaller fire equipment companies are mainly dealing with fire extinguishers filling and servicing. They normally buy locally made cylinders and other components based on Jordan fire extinguisher standard specifications. Valves, hoses etc. are purchased from international suppliers. The in-house production operation normally

include painting, filling, pressure testing and labeling of fire extinguishers. Equipment used for filling is either automatic or semiautomatic filling machines. Extinguishers are often sold under their own brand names. The companies obtain the necessary licenses and certifications for their operation from Civil Defense.

## SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

### COMMENTS

1. The Fund Secretariat and the World Bank agreed a revised budget for this project. However, the World Bank had not confirmed the Government's agreement as of 8 November 2000.
2. The project costs are consistent with capital costs recommended for use in preparing such projects in Decision 20/46 as well as previous decisions of the Executive Committee on the halon fire extinguisher and fixed system sub-sector.
3. The Fund Secretariat noted that the latest halon consumption reported for 1999 was 255 ODP tonnes while the project is to phase-out 421.8 ODP tonnes. The World Bank indicated that it was aware of the consumption figures for 1999 but the phase-out in the project is the consumption collected from enterprises during the preparation of the project.
4. Several companies included in this terminal umbrella project are halon fillers and suppliers that have halon filling equipment with minimum or inconsistent patterns of filling and refilling cylinders produced elsewhere. As part of the project, halon filling equipment will be destroyed for these 22 companies as well as for the two larger size halon extinguisher manufacturers.
5. The project will also provide 6 system manufacturers equipment for alternative chemicals, licenses, some tooling, software, and training.

### RECOMMENDATIONS

1. The Sub-Committee on Project Review may wish to consider recommending the approval of this project in amounts indicating in the tables below and with the understanding that this is a terminal project for the halon sector in Jordan.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Terminal halon 1211 and halon 1301 phaseout umbrella project for fire equipment manufacturers and suppliers in Jordan converting to ABC powder, CO <sub>2</sub> , HFC-227ea and inert gases as substitutes	563,000	71,930	IBRD