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Executive Committee of
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Implementation of the Montreal Protocol

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Nairobi, 28-30 May 1997

PROJECT PROPOSAL: JORDAN

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

Foam

•	Conversion to CFC-free technology in the manufacture of flexible slabstock PUF (Box Foam) at Baybars	World Bank
•	Conversion to CFC-free technology in the manufacture of extruded polysterene at Al Hussam	World Bank

PROJECT EVALUATION SHEET
JORDAN

SECTOR: Foams ODS use in sector (199?): 625 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible slabstock 6.23 US $/kg
Extruded polystyrene 8.22 US $/KG

Project Titles:

(a) Conversion to CFC-free technology in the manufacture of flexible slabstock PUF (Box Foam) at Baybars.

(b) Conversion to CFC-free technology in the manufacture of extruded polysterene at Al Hussam.

Project Data	**Slabstock**	**Extruded**
	Baybars	**Al Hussam**
ODS phase-out (ODP tonnes)	30	50
Proposed project duration (Yrs)	1.5	2
Incremental capital cost (US $)	104,500	378,000
Contingency (%)	10	10
Incremental operational cost (US $)	8,000	(30,000)
Total project cost (US $)	112,500	348,000
Local ownership (%)	100	100
Export component (%)	0	0
Amount requested (US $) {Original}	123,500	400,000
{Revised}	112,500	348,000
Cost effectiveness (US $/kg)	3.75	6.96
National Coordinating Agency	Ministry of Municipalities & Rural Dept. of Environment, Jordanian Ozone Unit	
Implementing Agency	World Bank	
Technical review completed?	Yes	Yes

Secretariat's Recommendations:		
Amount recommended (US $)	112,500	347,855
Project impact (ODP tonnes)	30	50
Cost effectiveness (US $/kg)	3.75	6.95
Implementing Agency support cost (US $)	14,625	45,221
Total cost to Multilateral Fund (US $)	127,125	393,076

PROJECT DESCRIPTION

Slabstock

(a) Conversion to CFC-free technology in the manufacture of flexible slabstock PUF (Box Foam) at Baybars.

1. Baybars manufactures flexible slabstock polyurethane foam using a Spuhl boxfoam unit. Annual foam production is about 600 tonnes.

2. Phase-out of CFC-11 will be done through the use of additive/low index technology with reduced use of methylene chloride. Capital costs include upgrade of methylene chloride storage and metering system (US $35,000), process ventilation (US $40,000), trials, training and technology transfer (US $30,000)

Polystyrene/polyethylene

(b) Conversion to CFC-free technology in the manufacture of extruded polystyrene at Al Hussam

1. Al Hussam Plastics Industries Co. Ltd. (Al Hussam) will phase out the use of CFC-12 in the manufacturing of extruded polystyrene bags through the use of butane as blowing agent. The project costs include costs of equipment for storage and handling of butane (US $60,000), extruder retrofit (including 2 explosion-proof motors) (US $110,000) and safety related costs (US $114,000) as well as trials, training and technology transfer (US $30,000) and contingency. Incremental operating benefits (US $28,000) are expected to be realized and are factored into the project costs.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Flexible (Slabstock) (Baybars)

1. Following discussions between the Fund Secretariat and the World Bank concerning the baseline conditions of the company, the cost of metering system was revised to US $25,000. All other costs were agreed.

Extruded polystyrene (Al Hussam)

2. Following discussions between the Fund Secretariat and the World Bank it was agreed that the extruder retrofit should include the explosion-proof motors, eliminating US $20,000 from the capital costs, while the building modifications was costed at US $55,000 instead of US $75,000. The capital cost was therefore revised to US $389,000. All other costs were agreed.

Impact of Projects on 1999 Freeze

3. The project documents indicated as follows:

'Pending confirmation from the government of Jordan, the project is not required to meet the 1999 freeze for Jordan. The project is, however, part of the overall strategy of the accelerated phaseout schedule adopted by Jordan and consistent with the country program."

RECOMMENDATION

1. The Fund Secretariat recommends blanket approval of the projects with the funding levels and associated support costs as indicated below:

Project Title	Project Cost US $	Support Cost US $	Implementing Agency
(a) Conversion to CFC-free technology in the manufacture of flexible slabstock PUF (Box Foam) at Baybars	112,500	14,625	World Bank
(b) Conversion to CFC-free technology in the manufacture of extruded polysterene at Al Hussam	347,855	45,221	World Bank