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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
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Beijing, 24-26 November 1999

PROJECT PROPOSALS: THAILAND

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

Foam

- Conversion from CFC-11 to LIA technology in the manufacture of flexible polyurethane foam, to water-based technology for flexible molded foam, to water-based technology for structural foam/ISF applications & HCFC-141b technology for rigid polyurethane foam at Great Foam Products Co.Ltd. — UNDP
- Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at P.S. Plastic Container L.P. — UNDP
- Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at S.K. Container Co. Ltd. — UNDP

Halon

- Halon management program for Thailand, halon recovery, recycling and banking — IBRD

PROJECT EVALUATION SHEET
THAILAND

SECTOR: Foam ODS use in sector (1998): 1,279 ODP tonnes

Sub-sector cost-effectiveness thresholds: Rigid US $7.83/kg

Project Titles:

(a) Conversion from CFC-11 to LIA techn. in manuf.flexible polyurethane foam, to water-based tech. for flexible molded foam, to water-based tech. for structural foam/ISF applications & HCFC-141b tech. for rigid polyurethane foam at Great Foam Products Co.Ltd.
(b) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at P.S. Plastic Container L.P.
(c) Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at S.K. Container Co. Ltd.

Project Data	**Multiple-subsectors**	**Rigid**	**Rigid**
	Great Foam Products	**Plastic Container**	**S.K. Container**
Enterprise consumption (ODP tonnes)	23.10	10.70	11.00
Project impact (ODP tonnes)	22.10	9.70	10.00
Project duration (months)	36	36	36
Initial amount requested (US $)	270,885	75,951	78,300
Final project cost (US $):			
Incremental capital cost (a)	290,000	80,000	80,000
Contingency cost (b)	29,000	8,000	8,000
Incremental operating cost (c)	101,700	41,385	41,350
Total project cost (a+b+c)	420,700	129,385	129,350
Local ownership (%)	100%	100%	100%
Export component (%)	0%	0%	0%
Amount requested (US $)	270,885	75,951	78,300
Cost effectiveness (US $/kg.)	12.26	7.83	7.83
Counterpart funding confirmed?			
National coordinating agency	Department of Industrial Works		
Implementing agency	UNDP	UNDP	UNDP

Secretariat's Recommendations			
Amount recommended (US $)		75,951	78,300
Project impact (ODP tonnes)		9.70	10.00
Cost effectiveness (US $/kg)		7.83	7.83
Implementing agency support cost (US $)		9,874	10,179
Total cost to Multilateral Fund (US $)		85,825	88,479

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1998)		4592.7	ODP tonnes
- Baseline consumption* of Annex A Group I substances (CFCs)		6082.1	ODP tonnes
- 1998 consumption of Annex A Group I substances		3783.0	ODP tonnes
- Baseline consumption of CFCs in foam sector		2116.7	
- 1998 consumption of CFCs in foam sector		1279.0	
- Funds approved for investment projects in foam sector as of end of 1998	US $	9,531,178	
- Quantity of CFC to be phased out in foam projects as of end of 1998		1906.8	ODP tonnes
- Quantity of CFC to be phased out in foam projects approved in 1999 (27th and 28th Meetings)		195.2	ODP tonnes
- Funds approved for investment projects in the foam sector in 1999 (27th and 28th Meetings)	US $	1,287,464	

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

Multiple sectors: Great Foam Products

1. Great Foam used a total of 23.1 tonnes of CFC-11 (average 1996-1998). It used in the manufacture of flexible slabstock foam (boxfoam) for furniture (1.2 tonnes); flexible molded foam for automotive applications, pillows and furniture (9.5 tonnes); rigid foam for panels and pipe insulation (10.5 tonnes); and structural rigid integral skin foam for imitation wood products (1.9 tonnes). The residual consumption of the boxfoam is to be converted to Low Index Additive (LIA) technology as the enterprise has already maximized use of methylene chloride. The conversion technologies for the other components are water-based (TDI) formulations for flexible molded foam; water-based formulations for the structural foam applications; and HCFC-141b for the rigid foam applications.

2. The project includes replacement of the existing boxfoam dispenser by a semi-automatic boxfoam unit with exhaust and metering of the hazardous/critical components (US $90,000); replacement of one low pressure dispenser by a high pressure dispenser for insulating rigid foam applications (US $90,000); and retrofit of two low pressure dispensers for temperature control and process exhaust (US $40,000) for flexible molded foam. Other costs include trials (6 applications at US $5,000 each), validation testing for automotive applications (US $10,000), training and technology transfer (US $20,000). The project also includes incremental operating costs for four years for the flexible slabstock (US $5,230), and for two years for all other applications (US $96,470).

3. The incremental operational cost includes the cost associated with claim for 10% increase in density for the flexible molded foam and rigid foam components. The cost associated with

increase of density accounts for 75% of the incremental operational cost of the flexible molded foam components of US $45,330 and 84% of that of the rigid foam components of US $36,350.

P.S. Plastic Container and S.K. Container

4. P.S. Plastic Container L.P. and S.K. Container used 10.7 and 11.7 tonnes respectively of CFC-11 (average 1996-1998) in the manufacture of insulated polyurethane containers. Both companies use manual operations in their production. The production is to be converted to HCFC-141b as an interim step, with a likely permanent solution being water-based formulations. Each project includes purchase of a high pressure dispenser with one mixing head on rails or a lorry with 50% enterprise contribution (net US $65,000). Other costs include trials (US $5,000), training and technology transfer (US $10,000) and contingency (US $8,000). The project also includes incremental operating costs for two years of US $41,385 and US $41,350 for Plastic Container and S.K. Container respectively. The requested grant is based on the maximum allowable grant calculated by the ODP eliminated.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Great Foam Products

1. Since the company has virtually phased out CFC-11 in its boxfoam operation and is currently using methylene chloride, the request for a new semi-automatic boxfoam machine at US $90,000 to phase out the residual (1.2 tonnes) CFC-11 was not considered by the Secretariat to be an eligible incremental cost.

2. With regard to the equipment for P.S. Plastic Container and S.K. Containers, based on previously discussed similar projects in Thailand UNDP was made aware of possible avoidable technical upgrade. However since revision in costs would not have affected the eligible grant, (the project costs are above the threshold) the projects have not been revised.

3. Based on the analysis of the production programme and the corresponding CFC consumption figures, it was determined that the eligible grant should be US $233,311 or US $203,295 if the cost associated with the 10% increase in density for the panel and pipe production is not taken into account. The discussion on these costs is still on-going. The Secretariat will communicate its outcome to the Sub-Committee on Project Review.

P.S. Plastic Container and S.K. Container

4. The project costs have been discussed. The incremental operational cost includes the cost of 5% increase in density. However, this does not have an impact on the eligible grant, which is at the cost-effectiveness threshold.

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the projects for P.S. Plastic Container and S.K. Container with the levels of funding and associated support costs as indicated below

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(b)	Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at P.S. Plastic Container L.P.	75,951	9,874	UNDP
(c)	Conversion from CFC-11 to HCFC-141b technology in the manufacture of rigid polyurethane foam at S.K. Container Co. Ltd.	78,300	10,179	UNDP

PROJECT EVALUATION SHEET
THAILAND

SECTOR: Halon ODS use in sector (1998): 154 ODP tonnes

Sub-sector cost-effectiveness thresholds: General US $1.48/kg

Project Titles:

(a) Halon management program for Thailand, halon recovery, recycling and banking

Project Data	**Banking**
Enterprise consumption (ODP tonnes)	
Project impact (ODP tonnes)	
Project duration (months)	48
Initial amount requested (US $)	283,250
Final project cost (US $):	
Incremental capital cost (a)	382,500
Contingency cost (b)	38,250
Incremental operating cost (c)	
Total project cost (a+b+c)	420,750
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US $)	220,750
Cost effectiveness (US $/kg.)	
Counterpart funding confirmed?	
National coordinating agency	Department of Industrial Works
Implementing agency	IBRD

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

(a) Halon management program for Thailand, halon recovery, recycling and banking

1. This request is a joint request from the Government of Sweden and the World Bank. This project will lead to a comprehensive national halon management program for Thailand and support the phase-out achieved through the proposed halon manufacturing conversion projects. The project aims at eliminating use and recovering halons from non essential halon fire protection applications, limit the phase-out costs to users and promote the use of non ODS fire protection alternatives. The project will also assist critical and essential halon users in developing their halon phase-out programmes and ensure supply to halons to remaining essential uses. The project will provide reclamation equipment and storage tanks for a central facility and smaller recycling equipment for regional workshops. Technical assistance is requested to support national capacity building.

2. Meeting the 2002 Freeze requirement for halons: The project is supported by national regulations, which will control import of new halons and prevent new uses. The project will ensure that Thailand is able to meet the 2002 freeze target.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The timing of the halon banking project should be co-ordinated with the timing of the phase-out of the primary halon consumers which are the fire extinguisher manufacturers. The proposal indicates that an umbrella phase-out projects will be submitted for Thailand to the 30th Meeting of the Executive Committee. As with CFC recycling, it is best to phase-out the users to ensure that the recycling activity will be successful.

2. The World Bank indicated that the schedule for implementing the halon banking is consistent with the expected umbrella phase-out project.

3. The World Bank and the Secretariat have agreed to the requested costs, as revised.

RECOMMENDATION

1. The Executive Committee may wish to consider if the projects should be approved prior to the conversion of fire-fighting equipment manufacturers to non-ODS alternatives.