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Executive Committee of
the Multilateral Fund for the
Implementation of the Montreal Protocol

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PROJECT PROPOSAL: THAILAND

This document includes the Comments and Recommendations from the Fund Secretariat on the following project:

Foam

- Phase out of the use of CFCs in the manufacture of rigid PUR foam for thermoware at Raengwa Standard Industry Co. Ltd.

UNDP

PROJECT EVALUATION SHEET **THAILAND**

SECTOR: FOAM ODS use in sector (1991): 1,510 ODP tonnes

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

Project Title:

Phase out of the use of CFCs in the manufacture of rigid PUR foam for thermoware at Raengwa Standard Industry Co. Ltd.

Project Data	Rigid Foam
	Raengwa Standard Industry Co. Ltd.
ODS phase-out (ODP tonnes)	25
Proposed project duration (Yrs)	1.5
Incremental capital cost (US\$)	192,500
Contingency (%)	10
Incremental operational cost (US\$)	56,550 (Not claimed)
Total project cost (US\$)	192,500
Local ownership (%)	100
Export component (%)	0
Amount requested (US\$) {Original {Revised	192,500
Cost effectiveness (US\$/kg)	7.70
National Coordinating Agency	Department of Industrial Works
Implementing Agency	UNDP
Technical review completed?	Yes

<i>Secretariat's Recommendations</i>	
Amount recommended (US \$)	181,500
Project impact (ODP tonnes)	25
Cost effectiveness (US \$/kg)	7.26
Implementing Agency support cost (US\$)	23,595
Total cost to Multilateral Fund	205,095

PROJECT DESCRIPTION

Phase out of the use of CFCs in the manufacture of rigid PUR foam for thermoware at Raengwa Standard Industry Co. Ltd.

1. Raengwa Standard Industry manufactures thermoware products from rigid polyurethane foam. It has a large product line which includes beverageware, foodware, householdware, cool boxes, etc. Chemicals used in production are blended in-house.
2. The enterprise consumes 25 tonnes of CFC-11 and operates three low pressure dispensers.
3. The enterprise will phase out CFC-11 through the use of water blown technology. However, it appears that the use of HCFC-141b for an interim period, which is not specified, "will be required until the technical challenges related to the use of all water blown rigid foams can be overcome".
4. The capital costs of the project relate to the cost of replacing the three low pressure dispensers with two high pressure dispensers, trials and technology transfer.
5. The project incurs incremental cost which is not claimed, although if claimed, the cost-effectiveness of the project would exceed the threshold value for the sub-sector.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS**COMMENTS**

1. Further communication from UNDP's foam sector expert pointed to the maturity of the water-based formulations although not currently offered in Thailand, and expressed the conviction that by the time the project gets funded and implementation starts, it would be feasible to implement the water based technology without recourse to the use of HCFC-141b. Consequently, the cost effectiveness has been based on water blown technology.

2. The difference in the amount requested and the amount recommended is due to the fact that the cost of the high pressure machines are recommended at US \$75,000 (plus 10% contingency), rather than US \$80,000 (plus contingency, as requested in the project).

RECOMMENDATIONS

1. The Fund Secretariat recommends approval of the projects with associated support costs as shown in the table below:

	Project Cost US \$	Support Cost US \$	Implementing Agency
Phase out of the use of CFCs in the manufacture of rigid PUR foam for thermoware at Raengwa Standard Industry Co. Ltd.	181,500	23,595	UNDP