



**United Nations
Environment
Programme**



Distr.
LIMITED

UNEP/OzL.Pro/ExCom/23/46/Corr.1
6 November 1997

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Twenty-third Meeting
Montreal, 12-14 November 1997

Corrigendum

PROJECT PROPOSALS: THAILAND

This corrigendum is issued to replace pages 12, 16, 17 and 25 with the attached pages.

PROJECT EVALUATION SHEET **THAILAND**

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

Sub-sector cost-effectiveness thresholds: Flexible Foam US \$6.23/kg
Integral Skin US \$16.86/kg

Project Titles:

- (a) NOVOCHEM - conversion to CFC-free Technology in the Manufacture of Integral Skin Polyurethane Foam
- (b) CHAREON PORN - conversion to CFC-free Technology in the Manufacture of Flexible Slabstock Polyurethane Foam
- (c) NUN CHAROEN - Conversion to CFC-free technology in the manufacture of Flexible Polyurethane Boxfoam
- (d) THAI INTERNATIONAL - conversion to CFC-free Technology in the Manufacture of Flexible Slabstock Polyurethane foam (Boxfoam)

Project Data	Integral Skin	Flexible		
	Novochem	PORN	NUN	Thai Int'l
ODS phase-out (ODP tonnes)	19.7	15	16.8	15
Proposed project duration (months)	24	24	24	24
Incremental capital cost (US \$)	171,600	132,000	121,000	110,000
- including contingency (%)	10	10	10	10
Incremental operational cost (US \$)	25,000	0	48,000	(16,500)
Total project cost (US \$)	196,600	132,000	169,000	93,500
Local ownership (%)	100	100	100	100
Export component (%)				
Amount requested (US \$) {Original}	296,700	93,500	105,000	93,500
{Revised}	196,600	93,500		
Cost effectiveness (US \$/kg)	9.98	6.23	6.23	6.23
National Coordinating Agency	Hazardous Substances Control Division Department of Industrial Works (DIW)			
Implementing Agency	UNDP			
Technical review completed?	Yes	Yes	Yes	Yes

Secretariat's Recommendations:

Amount recommended (US \$)	196,600	93,500	105,000	93,500
Project impact (ODP tonnes)	19.7	15	16.8	15
Cost effectiveness (US \$/kg)	9.98	6.23	6.23	6.23
Implementing Agency support cost (US \$)	25,558	12,155	13,650	12,155
Total cost to Multilateral Fund (US \$)	222,158	105,655	118,650	105,655

RECOMMENDATION(S)

1. The Fund Secretariat concluded its discussions with UNDP on all the issues outlined in the Secretariat's comments, and recommends approval of the projects with associated support costs at the funding level shown in the table below:

Project Title	Project Cost US \$	Support Cost US \$	Implementing Agency
(a) NOVOCHEM - conversion to CFC-free Technology in the Manufacture of Integral Skin Polyurethane Foam	196,600	25,558	UNDP
(b) CHAREON PORN - conversion to CFC-free Technology in the Manufacture of Flexible Slabstock Polyurethane Foam	93,500	12,155	UNDP
(c) NUN CHAROEN - Conversion to CFC-free technology in the manufacture of Flexible Polyurethane Boxfoam	105,000	13,650	UNDP
(d) THAI INTERNATIONAL - conversion to CFC-free Technology in the Manufacture of Flexible Slabstock Polyurethane foam (Boxfoam)	93,500	12,155	UNDP

PROJECT EVALUATION SHEET THAILAND

SECTOR: REFRIGERATION ODS use in sector (199): 500 ODP tonnes

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

Project Titles:

- (a) Building chiller replacement programme to reduce the usage of CFC-11 and CFC-12 in chiller servicing at Electricity Generating Authority of Thailand (EGAT)
- (b) Elimination of ODS used in the production of household refrigerators at Hitachi Consumer Products
- (c) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Padriew Co. Ltd..
- (d) Conversion of CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Sahakarn Intercool
- (e) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Siam Cooler
- (f) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Sirithana

Project Data	Chiller	Domestic	Commercial			
	EGAT	Hitachi	Padriew	Sahakarn	Siam Cooler	Sirithana
ODS phase-out (ODP tonnes)	59.9	149	10.24	5.7	26.38	8.06
Proposed project duration (months)	72	12	18	18	18	18
Incremental capital cost (US \$)		1,487,020	82,492	81,706	82,945	80,175
- including contingency (%)		0	10	10	10	10
Incremental operational cost (US \$)		1,215,000	73,258	4,991	103,600	42,418
Total project cost (US \$)	4,950,000	2,702,020	155,750	86,697	186,545	122,593
Local ownership (%)	100	51	100	100	100	100
Export component (%)						
Amount requested (US \$) {Original}	4,950,000	1,227,257	155,750	86,697	401,239	122,593
{Revised}			135,954	86,697	186,545	122,593
Cost effectiveness (US \$/kg)	n/a	8.24	13.28	15.21	7.07	15.21
National Coordinating Agency	Department of Industrial Works (DIW)					
Implementing Agency	World Bank					
Technical review completed?	Yes					

Secretariat's Recommendations:

Amount recommended (US \$)			135,954	86,697	186,545	122,593
Project impact (ODP tonnes)			10.24	5.7	26.38	8.06
Cost effectiveness (US \$/kg)			13.28	15.21	7.07	15.21
Implementing Agency support cost (US \$)			17,674	11,271	24,250	15,937
Total cost to Multilateral Fund (US \$)			153,628	97,968	210,795	138,530

(b) Elimination of ODS used in the production of household refrigerators at Hitachi Consumer Products

1. The issue of eligibility of costs associated with the extension of testing room, the replacement of foaming jigs and vacuum forming machines have been identified. These issues are based on technical considerations and have not been resolved in the course of discussion with the World Bank. The Secretariat recommends to defer the consideration of the project until the next meeting of the Executive Committee.

(c) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Padriew Co. Ltd..

(d) Conversion of CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Saharan Intercool

(e) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Siam Cooler

(f) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Sirithana

1. The Secretariat concluded its discussions with the World bank and recommends blanket approval of the projects with associated support costs at the funding levels shown in the table below.

Project Title	Project Cost US \$	Support Cost US \$	Implementing Agency
(a) Building chiller replacement programme to reduce the usage of CFC-11 and CFC-12 in chiller servicing at Electricity Generating Authority of Thailand (EGAT)			World Bank
(b) Elimination of ODS used in the production of household refrigerators at Hitachi Consumer Products			World Bank
(c) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Padriew Co. Ltd. ¹	135,954	17,674	World Bank
(d) Conversion of CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation at Sahakarn Intercool	86,697	11,271	World Bank
(e) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Siam Cooler ¹	186,545	24,250	World Bank
(f) Conversion to CFC-12 commercial refrigeration to HFC-134a and CFC-11 to HCFC-141b as the blowing agent for foam insulation in the manufacture of water coolers at Sirithana	122,593	15,937	World Bank

¹ Funding for incremental operating costs associated with compressors are not included pending the information in accordance with Decision 22/26.