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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: INDONESIA

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

Foam

• Phase-out of CFC-11 by conversion to water-based systems (FMF) and HCFC-141b (ISF) in the manufacture of polyurethane foam for automotive and furniture applications at P.T. Yoska Prima Inti	UNDP
• Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Meta Presindo Utama in the manufacture of polyurethane integral skin and moulded polyurethane foam	UNIDO
• Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Nirwana in the manufacture of polyurethane integral skin and flexible moulded polyurethane foam	UNIDO
• Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (boxfoam and sprayfoam) at PT Intimas Chemindo	IBRD
• Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (panels) at PT Dawamiba Engineering	IBRD
• Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at Kimura Fiberglass	IBRD
• Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture	IBRD

of rigid polyurethane foam (sprayfoam) at PT Sentra Sukses Selalu	
• Phase-out of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at CV Sumber Logam	IBRD
• Phase-out of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam, panels, blocks) at Tansri Gani	UNDP

PROJECT EVALUATION SHEET
INDONESIA

SECTOR: Foam ODS use in sector (1998): 3015 ODP tonnes

Sub-sector cost-effectiveness thresholds: Integral Skin US $16.86/kg

Project Titles:

(a) Phase-out of CFC-11 by conversion to water-based systems (FMF) and HCFC-141b (ISF) in the manufacture of polyurethane foam for automotive and furniture applications at P.T. Yoska Prima Inti
(b) Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Meta Presindo Utama in the manufacture of polyurethane integral skin and moulded polyurethane foam
(c) Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Nirwana in the manufacture of polyurethane integral skin and flexible moulded polyurethane foam

Project Data	**Integral skin**		
	Yoska	**Meta Presindo**	**Nirwana**
Enterprise consumption (ODP tonnes)	63.00	22.50	34.00
Project impact (ODP tonnes)	49.50	21.80	32.60
Project duration (months)	36	24	24
Initial amount requested (US $)	390,868	285,653	309,211
Final project cost (US $):			
Incremental capital cost (a)	70,000	208,000	208,000
Contingency cost (b)	7,000	20,800	20,800
Incremental operating cost (c)	291,868	56,853	80,411
Total project cost (a+b+c)	368,868	285,653	309,211
Local ownership (%)	100%	100%	100%
Export component (%)	0%	0%	0%
Amount requested (US $)	368,868	285,653	309,211
Cost effectiveness (US $/kg.)	7.45	13.10	9.52
Counterpart funding confirmed?			
National coordinating agency		Ministry of Environment	
Implementing agency	UNDP	UNIDO	UNIDO

Secretariat's Recommendations			
Amount recommended (US $)		285,653	309,211
Project impact (ODP tonnes)		21.80	32.60
Cost effectiveness (US $/kg)		13.10	9.52
Implementing agency support cost (US $)		37,135	40,197
Total cost to Multilateral Fund (US $)		322,788	349,408

PROJECT EVALUATION SHEET
INDONESIA

SECTOR: Foam ODS use in sector (199): ODP tonnes

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

Project Titles:

(d) Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (boxfoam and sprayfoam) at PT Intimas Chemindo
(e) Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (panels) at PT Dawamiba Engineering
(f) Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at Kimura Fiberglass
(g) Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at PT Sentra Sukses Selalu
(h) Phase-out of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at CV Sumber Logam
(i) Phase-out of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam, panels, blocks) at Tansri Gani

Project Data	**Rigid**					
	Chemindo	**Dawamiba**	**Kimura**	**Sukses Selalu**	**Sumber Logam**	**Tansri Gani**
Enterprise consumption (ODP tonnes)	82.00	34.90	23.30	159.00	13.30	50.00
Project impact (ODP tonnes)	74.30	31.60	21.10	144.10	12.10	45.30
Project duration (months)	36	36	36	36	36	36
Initial amount requested (US $)	320,613	247,428	94,528	609,368	77,533	354,700
Final project cost (US $):						
Incremental capital cost (a)	165,000	100,000	35,000	298,750	35,000	253,000
Contingency cost (b)	16,500	10,000	3,500	29,875	3,500	25,300
Incremental operating cost (c)	108,794	46,500	30,885	210,954	17,618	190,000
Total project cost (a+b+c)	290,294	156,500	69,385	539,579	56,118	468,300
Local ownership (%)	100%	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%	0%
Amount requested (US $)	290,294	156,500	69,385	539,579	56,118	354,700
Cost effectiveness (US $/kg.)	3.91	4.95	3.29	3.74	4.64	7.83
Counterpart funding confirmed?						Yes
National coordinating agency	Ministry of Environment					
Implementing agency	IBRD	IBRD	IBRD	IBRD	IBRD	UNDP

Secretariat's Recommendations						
Amount recommended (US $)	290,294	156,500	69,385	539,579	56,118	
Project impact (ODP tonnes)	74.30	31.60	21.10	144.10	12.10	
Cost effectiveness (US $/kg)	3.91	4.95	3.29	3.74	4.64	
Implementing agency support cost (US $)	37,738	20,345	9,020	69,354	7,295	
Total cost to Multilateral Fund (US $)	328,032	176,845	78,405	608,933	63,413	

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1998)		4,483.9	ODP tonnes
- Baseline consumption* of Annex A Group I substances (CFCs)		7,974.7	ODP tonnes
- 1998 consumption of Annex A Group I substances		4,238	ODP tonnes
- Baseline consumption of CFCs in foam sector		Not reported	
- 1998 consumption of CFCs in foam sector**		3015	ODP tonnes
- Funds approved for investment projects in foam sector as end of 1998	US $	17,008,088	
- Quantity of CFC to be phased out in foam sector as of end of 1998		3,322.8	ODP tonnes
- Quantity of CFC phased out in foam sector as of end of 1998		867.1	ODP tonnes

*Baseline consumption of Annex A controlled substances refers to average of the consumption for the years 1995-1997 inclusive.
**Based on information from the project document

The implementing agencies report that the Government has enacted regulations through the Ministry of Industry and Trade that has officially banned the import of ODS and goods containing ODS, as well as production of goods using ODS since early 1998. There remains an after-service market for refilling and servicing for the household refrigeration sector, and import of CFCs is allowed until 2003 for this purpose. In all other sectors, the use of ODS is no longer permissible. However, illegally imported CFCs are still readily available in the black market, undermining the ODS phaseout efforts by the Government. It is proposed that all remaining enterprises using ODS in the foam sector will have projects prepared through the MLF by the year 2000.

INTEGRAL SKIN FOAM PROJECT

Yoska Prima, Meta Presindo, Nirwana

1. These three companies used 63, 22.5 and 34 ODP tonnes respectively for a total of 118.8 tonnes of CFC-11. The companies manufacture flexible molded and integral skin foams for the automotive and furniture industry. Yoska manufactures flexible molded foam cushions for automotive and furniture applications and integral skin arm rests. Meta Presindo also manufactures flexible molded motorcycle seats and car seats, head rests and flexible integral skin arm rests and tilting tables for coaches, while Meta Presindo produces flexible molded foam cushions and integral skin head and arm rests. All the companies will convert the flexible molded foam production to water-blown technology and the integral skin foam production to the use of HCFC-141b.

2. Yoska operates high pressure dispensers while Meta Presindo and Nirwana operate low pressure dispensers. The incremental capital costs of the conversion relate to the costs of retrofit of the low and high pressure dispensers at US $30,000 and US $10,000 respectively, including in the former case costs of thermal control and larger output pumps. The incremental capital costs also include the costs of mold ovens at US $10,000, in-mold coating sprayers at US $2,500 each and technology transfer, training and trials at US $30,000 for Yoska and US $20,000 each for the other companies.

3. Incremental operational costs relate to the higher cost of HCFC systems and higher use of MDI. However, the incremental operational cost of Yoska includes the cost associated with a claim for 10% increase in density, which amounts to US $219,223 over the cost associated with differences in the prices of chemicals. This makes up 75% of the total operational cost of US $291,868. UNDP indicates that this claim is made based on the fact that systems are not available at current densities, which was stated to be 42-45 kg/m^3. It claims that the current increase is closer to 20% but an assumption is made that by the time of implementation an increase of 10% will be required. However the other projects (from UNIDO) indicate that the typical densities for flexible molded foam products manufactured in Indonesia are between 45-50 kg/m^3 (which conform to industry norms) and therefore do not request any funds for density increase.

RIGID FOAM PROJECTS

Chemindo, Dawamiba, Kinmura, Sukses Selalu, Sumber Logam, Tansri Gani

4. The six companies used a total of 362.5 ODP tonnes of CFC-11 in 1998. Their individual consumptions range from 13.3-159 ODP tonnes.

5. They manufacture rigid polyurethane foam for various insulation and construction applications. Chemindo, Kinmura and Sumber Logam produce spray foam, Dawamiba produces foam for construction of telecommunications shelters, while Sukses Selalu produces panels. Tansri Gani like Sukses Selalu and the other three sprayfoam companies produces panels and sprayfoam. Tansri Gani and Chemindo also produce rigid boxfoam for various applications.

6. Chemindo, Kinmura and Sumber Logam operate high pressure spray dispensers, while Dawamiba and Sukses Selalu operate low pressure machines. Tansri Gani has four high pressure spray foam dispensers whose dates of purchase are between 1980 and 1990 as well as a 1985 low pressure spray foam machine. It also operates a 1980 low pressure 60 kg/min (VIK 60) and 1989 200 kg/min high pressure machine (KMK Rimstar) for its panel production and low pressure machine (VIK 18) of unknown purchase date for the block production.

7. The high pressure sprayfoam machines will be retrofitted at US $5,000 each while the low pressure machine will be replaced with high pressure at US $20,000.

8. At Tansri Gani it is proposed to switch production of the block foam from the VIK 18 to the KMK Rimstar and replace the VIK 60 and VIK 200 low pressure machines with two

60 kg/min high pressure machines at US $100,000 and US $110,000 respectively. The KMK Rimstar will be retrofitted at US $30,000.

9. With regard to the incremental operational costs, while there is no request for any costs associated with density increase for spray, block or panel foams in five projects (Chemindo, Dawamiba, Kinmura, Sukses Selalu and Sumber Logam – World Bank projects) the Tansri Gani project (UNDP) claims that the CFC-based foam has a density of 35 kg/m^3 for panels and blocks and 32-35 kg/m^3 for spray foam and therefore requests operational cost associated with 10% increase in density. The cost associated with the density increase amounts to US $104,400 and constitutes 55% of the total incremental operational cost calculated to be US $190,000.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Integral Skin Foam Projects

1. The Fund Secretariat and UNIDO discussed the projects for Meta Presindo and Nirwana and agreed on the costs. The incremental capital cost of the project for Yoska Prima was also agreed. With regard to the claim for 10% increase in density which results in the amount of US $219,223 the Secretariat could not recommend as eligible incremental operational cost since the density at which the company produces its foam currently does not require any density increase on conversion. Indonesia imports all its polyurethane chemicals. Since the project is to be implemented within a three year period such chemicals that would not add to the production costs of the companies should be available within that time.

2. In light of the above comments, the eligible project cost of Yoska Prima was determined by the Secretariat to be as follows:

Incremental capital cost:	US $70,000
10% contingency	7,000
Incremental operational cost	68,948
Total project cost	US $145,948

The amount of US $68,948 instead of US $219,868 claimed in the project represents the incremental operational cost relating to differences in chemical prices and their level of usage as in the other two projects.

Project Duration

3. While UNIDO proposes to implement the two projects (Meta Presindo and Nirwana) in the period of two years, UNDP will implement the Yoska Prima project in three years. Given Indonesia's planned restrictions on import of ODS in 2000, this long period of implementation could have a negative impact on the country's ODS phase-out strategies.

Rigid Foam Projects

4. The Secretariat and the World Bank discussed the projects of Chemindo, Dawamiba, Kinmura, Sukses Selalu and Sumber Logam and agreed on their costs.

5. With regard to Tansri Gani the intended rationalization of the machine in use after conversion was not found to be cost-effective upon analysis by the Secretariat and consultation with equipment and foam experts. The existing low pressure VIK 18 machine used for producing the block foam should continue to be used for the same production with necessary retrofit, as the use of high pressure machine is not essential.

6. With regard to the operational cost, information from industry experts led the Secretariat to conclude that the foam products manufactured by Tansri Gani which are similar to those manufactured by the other five companies do not normally require density increase following conversion to HCFC-141b. Furthermore in cases such as sandwich panels the HCFC-141b foam can be produced at similar densities as the CFC-based foam.

7. Based on the above comments the Secretariat determined the eligible incremental operational cost of the project as US $66,338 instead of US $190,000 indicated in the project, consistent with the other companies producing similar products for the Indonesian market.

Project Duration

8. Both UNDP and the World Bank propose to implement the projects in three years. The Secretariat draws attention to this issue in its comments in paragraph 3 above.

RECOMMENDATIONS

1. The Fund Secretariat recommends blanket approval of the projects for Meta Presindo, Nirwana, Intimas Chemindo, Dawamiba, Kinmura, Sukses Selalu and Sumber Logam with the funding level and associated support costs as indicated in the table below.

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(b)	Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Meta Presindo Utama in the manufacture of polyurethane integral skin and moulded polyurethane foam	285,653	37,135	UNIDO
(c)	Phase-out of CFC-11 consumption by conversion to water-blown technology and HCFC-141b at P.T. Nirwana in the manufacture of polyurethane integral skin and flexible moulded polyurethane foam	309,211	40,197	UNIDO
(d)	Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (boxfoam and sprayfoam) at PT Intimas Chemindo	290,294	37,738	IBRD
(e)	Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (panels) at PT Dawamiba Engineering	156,500	20,345	IBRD

(f)	Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at Kimura Fiberglass	69,385	9,020	IBRD
(g)	Phaseout of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at PT Sentra Sukses Selalu	539,579	69,354	IBRD
(h)	Phase-out of CFC-11 by conversion to HCFC-141b in the manufacture of rigid polyurethane foam (sprayfoam) at CV Sumber Logam	56,118	7,295	IBRD

2. The projects for Yoska Prima and Tansri Gani are submitted for individual consideration on the basis of the comments in paragraphs 1 to 3, 6 and 7 of the Secretariat's comments.