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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-fourth Meeting
Montreal, 18-20 July 2001

PROJECT PROPOSALS: NIGERIA

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

Foam:

- Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Apaco Foam & Chem. Ind. Ltd. by conversion to methylene chloride UNDP
- Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Atuchukwu Chemical Ind. Ltd. by conversion to methylene chloride UNDP
- Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Bibafoam Ind. Ltd. by conversion to methylene chloride UNDP
- Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Gasfa Industries Nig. Ltd. (Meka Foam) by conversion to methylene chloride UNDP
- Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Harmony Foam Nigerian Ltd. by conversion to methylene chloride UNDP
- Phasing out CFC-11 in the manufacture of flexible slabstock foam at Rima Foam Products Ltd. by conversion to methylene chloride UNDP
- Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Adig Plastics Ltd. by conversion to a combination of water +HCFC-141b based systems UNDP
- Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Global Plastic Industries (ING.) Ltd. by conversion to a combination of water +HCFC-141b based systems UNDP

PROJECT EVALUATION SHEET NIGERIA

SECTOR: Foam ODS use in sector (2000): 3,125 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible Slabstock US \$6.23/kg

Project Titles:

- (a) Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Apaco Foam & Chem. Ind. Ltd. by conversion to methylene chloride
- (b) Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Atuchukwu Chemical Ind. Ltd. by conversion to methylene chloride
- (c) Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Bibafoam Ind. Ltd. by conversion to methylene chloride
- (d) Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Gasfa Industries Nig. Ltd. (Meka Foam) by conversion to methylene chloride

Project Data	Flexible slabstock			
	Apaco Foam & Chem	Atuchukwu	Bibafoam Ind.	Gasfa
Enterprise consumption (ODP tonnes)	27.70	22.20	26.00	40.50
Project impact (ODP tonnes)	27.70	22.20	26.00	40.50
Project duration (months)	33	33	33	33
Initial amount requested (US \$)	147,018	138,306	161,381	252,315
Final project cost (US \$):				
Incremental capital cost (a)	142,000	114,900	114,900	225,800
Contingency cost (b)	14,200	11,490	11,490	22,580
Incremental operating cost (c)	-9,182	-7,902	-11,705	-9,537
Total project cost (a+b+c)	147,018	118,488	114,685	238,843
Local ownership (%)	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%
Amount requested (US \$)	147,018	118,488	114,685	238,843
Cost effectiveness (US \$/kg.)	5.31	5.34	4.41	5.90
Counterpart funding confirmed?		Yes	Yes	Yes
National coordinating agency	Federal Ministry of Environment			
Implementing agency	UNDP	UNDP	UNDP	UNDP

Secretariat's Recommendations				
Amount recommended (US \$)	147,018	118,488	114,685	238,843
Project impact (ODP tonnes)	27.70	22.20	26.00	40.50
Cost effectiveness (US \$/kg)	5.31	5.34	4.41	5.90
Implementing agency support cost (US \$)	19,112	15,403	14,909	31,050
Total cost to Multilateral Fund (US \$)	166,130	133,891	129,594	269,893

**PROJECT EVALUATION SHEET
NIGERIA**

SECTOR: Foam ODS use in sector (2000): 3,125 ODP tonnes

Sub-sector cost-effectiveness thresholds: Flexible Slabstock US \$6.23/kg
Rigid US \$7.83/kg

Project Titles:

- (e) Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Harmony Foam Nigerian Ltd. by conversion to methylene chloride
- (f) Phasing out CFC-11 in the manufacture of flexible slabstock foam at Rima Foam Products Ltd. by conversion to methylene chloride
- (g) Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Adig Plastics Ltd. by conversion to a combination of water +HCFC-141b based systems
- (h) Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Global Plastic Industries (ING.) Ltd. by conversion to a combination of water +HCFC-141b based systems

Project Data	Flexible slabstock		Rigid	
	Harmony	Rima	Adig Plastics	Global Plastic
Enterprise consumption (ODP tonnes)	22.30	23.00	15.55	5.20
Project impact (ODP tonnes)	22.30	23.00	14.31	4.70
Project duration (months)	33	33	33	33
Initial amount requested (US \$)	126,531	143,290	112,050	36,801
Final project cost (US \$):				
Incremental capital cost (a)	132,000	114,900	65,000	35,000
Contingency cost (b)	13,200	11,490	6,500	3,500
Incremental operating cost (c)	-18,669	-7,354	46,027	12,793
Total project cost (a+b+c)	126,531	119,036	117,527	51,293
Local ownership (%)	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%
Amount requested (US \$)	126,531	119,036	112,050	36,801
Cost effectiveness (US \$/kg.)	5.67	5.18	7.83	7.83
Counterpart funding confirmed?	Yes	Yes	Yes	Yes
National coordinating agency	Federal Ministry of Environment			
Implementing agency	UNDP	UNDP	UNDP	UNDP

Secretariat's Recommendations				
Amount recommended (US \$)	126,531	119,036	112,050	36,801
Project impact (ODP tonnes)	22.30	23.00	14.31	4.70
Cost effectiveness (US \$/kg)	5.67	5.18	7.83	7.83
Implementing agency support cost (US \$)	16,449	15,475	14,567	4,784
Total cost to Multilateral Fund (US \$)	142,980	134,511	126,617	41,585

PROJECT DESCRIPTION

Sector background*

- Latest available total ODS consumption (1999)	4,812.55 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	3,650.00 ODP tonnes
- Consumption of Annex A Group I substances for the year 2000	4,096.80 ODP tonnes
- Baseline consumption of CFCs in foam sector	Not Available
- Consumption of CFCs in foam sector in 2000	3,125.00 ODP tonnes
- Funds approved for investment projects in foam sector as of end of 2000	US \$6,410,464.00
- Quantity of CFC to be phased out in investment projects in foam sector as of end of 2000	1,366.43 ODP tonnes
- Quantity of CFC phased out from approved investment projects in the foam sector as of end of 2000	486.00 ODP tonnes
- Quantity of CFCs in approved investment projects in the foam sector not yet completed as of end of 2000	880.10 ODP tonnes
- Quantity of CFCs remaining to be phased out in the foam sector as of end of 2000	2,244.90 ODP tonnes

*Based on data submitted to the Fund Secretariat by the Government of Nigeria on 19 June 2001.

Rigid foam

Adig Plastics, Global Plastic Industries

1. Adig Plastics and Global Plastic Industries consumed 15.5 and 5.2 ODP tonnes of CFC-11 per year, respectively (average of 1998-2000). The enterprises are involved in the production of rigid polyurethane foam for thermoware applications. The enterprises operate low-pressure dispensers in the baseline (two at Adig and one at Global).

2. The enterprises will phase out the use of CFC-11 by converting to HCFC-141b as the foam blowing agent. The projects include incremental capital costs covering the replacement of existing low-pressure dispensers with high-pressure models at US \$25,000 each, trials (US \$5,000 each), technology transfer and training (US \$5,000 each). Incremental operating costs of US \$12,793 and US \$46,027 are requested by Global and Adig respectively.

Flexible Slabstock Foam

3. Six flexible slabstock projects have been submitted to the 34th Meeting. The projects cover the phase out of CFC-11 by conversion to methylene chloride at six enterprises in Nigeria.

4. The six enterprises included in the projects (Apaco, Atuchukwu, Bibafoam, Gasfa, Harmony and Rima) consumed a total of 161.7 ODP tonnes of CFC-11 per year (average 1998-2000) in the production of flexible slabstock foam for bedding and furniture applications.

The enterprises, with the exception of Harmony, operate manual boxfoam machines in the baseline. At Harmony, a low-pressure max foam machine is used.

5. The projects include incremental capital costs for the six enterprises amounting to US \$1,024,000. This amount covers the cost of replacement of the manual boxfoam machines with semi-automatic boxfoam machines with 33% counterpart funding for use with methylene chloride (US \$46,900 each), storage facilities and metering equipment (US \$25,000 each), ventilation systems (US \$53,100 to US \$106,200 each), methylene chloride detectors and safety equipment (US \$8,000 to US \$16,000 each). The max foam machine at Harmony will be retrofitted for use with methylene chloride at a cost of US \$113,000. Other costs include technology transfer, trials and training (US \$19,000 to 24,000 each). Incremental operating costs ranging from US \$1,472 to US \$2861 are requested by Atuchukwu, Gasfa and Rima. The remaining enterprises are reporting incremental operational savings between US \$5,819 and US \$18,669.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

6. The projects for the conversion of the manual boxfoam operations were discussed between the Secretariat and UNDP. Following the discussions, the components and project costs were brought in line with similar projects approved and being implemented in other Article 5 countries. The revised costs are reflected in the recommended grants. The components of the other projects are consistent with similar projects approved for Nigeria and other Article 5 countries.

Actions on relevant sections of Decision 33/2

7. UNDP informed the Secretariat that it had not received validation of the CFC consumption to be phased out in the projects and/or commitment of the Government of Nigeria as required under Decision 33/2 (c) of the Executive Committee. The Government had sent a letter earlier to UNDP to request submission of the Nigerian projects to the 34th Meeting and wondered whether new letters were required to be sent for the same projects to the Meeting.

Project duration

8. Following discussion with UNDP consistent with Decision 33/2 (b), UNDP proposed a reduction of the duration of the projects from 36 months to 33 months.

RECOMMENDATIONS

9. The Fund Secretariat recommends blanket approval of the Apaco, Atuchukwu, Bibafoam, Gasfa, Harmony, Rima, Adig and Global Plastic projects with the levels of funding and implementing agency support costs indicated in the table below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Apaco Foam & Chem. Ind. Ltd. by conversion to methylene chloride	147,018	19,112	UNDP
(b)	Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Atuchukwu Chemical Ind. Ltd. by conversion to methylene chloride	118,488	15,403	UNDP
(c)	Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Bibafoam Ind. Ltd. by conversion to methylene chloride	114,685	14,909	UNDP
(d)	Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Gasfa Industries Nig. Ltd. (Meka Foam) by conversion to methylene chloride	238,843	31,050	UNDP
(e)	Phasing out of CFC-11 in the manufacture of flexible slabstock foam at Harmony Foam Nigerial Ltd. by conversion to methylene chloride	126,531	16,449	UNDP
(f)	Phasing out CFC-11 in the manufacture of flexible slabstock foam at Rima Foam Products Ltd. by conversion to methylene chloride	119,036	15,475	UNDP
(g)	Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Adig Plastics Ltd. by conversion to a combination of water +HCFC-141b based systems	112,050	14,567	UNDP
(h)	Phasing out of CFC-11 in the manufacture of rigid polyurethane foam at Global Plastic Industries (ING.) Ltd. by conversion to a combination of water +HCFC-141b based systems	36,801	4,784	UNDP
