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EXECUTIVE COMMITTEE OF
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PROJECT PROPOSALS: DEMOCRATIC REPUBLIC OF CONGO

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

Foam

- Terminal umbrella project for the foam sector UNDP

Refrigeration:

- Implementation of the refrigerant management plan: customs training UNEP
- Implementation of the refrigerant management plan: training of technicians in refrigeration UNEP
- Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme UNDP
- Implementation of the refrigerant management plan: awareness and incentive programme UNDP
- Implementation of the refrigerant management plan: monitoring the activities UNEP

**PROJECT EVALUATION SHEET
DEMOCRATIC REPUBLIC OF CONGO**

SECTOR: Foam ODS use in sector (2002): 260.0 ODP tonnes

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

Project Titles:

(a) Terminal umbrella for the foam sector

Project Data	Flexible slabstock
	Terminal Umbrella
Enterprise consumption (ODP tonnes)	172.40
Project impact (ODP tonnes)	123.00
Project duration (months)	36
Initial amount requested (US \$)	739,640
Final project cost (US \$):	
Incremental capital cost (a)	630,000
Contingency cost (b)	63,000
Incremental operating cost (c)	(25,440)
Total project cost (a+b+c)	667,560
Local ownership (%)	100
Export component (%)	0
Amount requested (US \$)	640,820
Cost effectiveness (US \$/kg.)	5.11
Counterpart funding confirmed?	
National coordinating agency	Ministry of Land Affairs, Environment and Tourism
Implementing agency	UNDP

Secretariat's Recommendations	
Amount recommended (US \$)	640,820
Project impact (ODP tonnes)	123.00
Cost effectiveness (US \$/kg)	5.11
Implementing agency support cost (US \$)	48,062
Total cost to Multilateral Fund (US \$)	688,882

PROJECT DESCRIPTION

Sector background

CFC (Annex A Group I) Consumption and Phase-out Profile

According to Decision 35/37 D.R. Congo has selected Option 2 as Starting Point amounting to:	386.60 ODP tonnes
- Remaining consumption of CFCs eligible for funding as at 41 st Meeting (per Decision 35/57, proviso B)	249.60 ODP tonnes
- Impact of ALL CFC projects submitted for funding at the 41 st Meeting	125.48 ODP tonnes
- Remaining consumption of CFCs eligible for funding following approval of projects submitted to 41 st Meeting	124.12 ODP tonnes

Terminal umbrella project in the foam sector

1. On behalf of the Government of the Democratic Republic of Congo, UNDP has submitted to the 41st Meeting a terminal umbrella project to phase-out a total of 172.4 ODP tonnes in the foam sector.

2. The project covers eight remaining enterprises in the flexible slabstock sub-sector in D.R. Congo. The enterprises produce flexible polyurethane blocks for a variety of applications including mattresses, pillows and carpet underlay. The enterprises currently use manual boxfoam machines consisting of a mechanical mixer arrangement, and are reported to be operating in a production environment that lacks basic occupational health and safety facilities such as ventilation.

3. The enterprises included in the project and their levels of CFC consumption are listed below:

Enterprise	Location	Reported CFC Consumption ODP tonnes	Eligible CFC Consumption ODP tonnes
New Mousse	Kinshasa	24.5	17.5
Mouskin	Kinshasa	23.7	16.9
Silver Mousse	Kinshasa	26.3	18.8
U.M.K. Sprl	Kinshasa	24.1	17.2
Cogetra Mousse	Lubumbashi	17.9	12.8
Sunny Business Enterprise	Kolwezi	22.0	15.7
Mousse Diamant	Mbuji Maji	8.5	6.0
Lala Salama	Boura	25.4	18.1
Total		172.4	123.0

4. The Government of D.R. Congo allocated 123.0 ODP tonnes of the country's remaining fundable consumption of 249.6 ODP tonnes for funding of the projects in the foam sector. Based on this allocation, the consumption eligible for funding per enterprise would be as indicated in the above table.

5. The production of all eight enterprises will be converted to the use of methylene chloride and will be provided with semi-automatic boxfoam machines (US \$75,000), methylene chloride storage tank, fume extractors and methylene chloride detectors. Counterpart contributions amounting to 33% of the cost of the semi-automatic boxfoam equipment would be made by each enterprise. Incremental operating savings equivalent to 8% of the incremental capital cost are deducted from the projects' costs. A summary of the incremental capital cost is provided below.

	Item	Unit Cost US \$	Quantity	Total Costs US \$
1.1	Semi-automatic boxfoam machines (with deduction of US \$24,750 from the cost of machine)	50,250	8	402,000
1.2	Methylene chloride storage tank	8,000	8	64,000
1.3	Fume extractors	10,000	8	80,000
1.4	Methylene chloride detectors system and safety devices	7,000	8	56,000
2.1	Trials	1,500	8	12,000
2.2	Technical assistance	2,000	8	16,000
	Sub-total	78,750		630,000
	10% contingency	7,875		63,000
	Total	86,625		693,000

6. The total grant for the project was calculated as follows:

Enterprise	CFC consumption (ODP tonnes)	Adjusted CFC consumption (ODP tonnes)	Project cost (US \$)	Eligible grant (US \$)	Cost- effectiveness (US \$/kg)
New Mousse	24.5	17.07	79,695	79,695	4.67
Mouskin	23.7	16.51	79,695	79,695	4.83
Silver Mousse	26.3	18.32	79,695	79,695	4.35
UMK	24.1	16.79	79,695	79,695	4.75
Cogetra Mousse	17.9	12.80	79,695	79,695	6.23
Sunny	22.0	15.33	79,695	79,695	5.20
Mousse Diamant	8.5	8.50	79,695	52,955	6.23
Lala Salama	25.4	17.69	79,695	79,695	4.50
TOTAL	172.4	123.01	637,560	610,820	4.97

7. Based on the above project costs and an agreed amount of US \$30,000 as management cost, the total grant of the umbrella project would be US \$640,820 with cost-effectiveness of US \$5.11/kg as shown in the cost summary below.

Project Cost

Item	Unit Cost US \$
Total cost of the project (US \$)	610,820
CFC phase-out (ODP tonnes)	123.00
Management cost (US \$)	30,000
CFC phase-out due to non-investment component at US \$12.1/kg (ODP tonnes)	2.48
Total requested amount	640,820
Cost-effectiveness	5.11

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

8. The Secretariat and UNDP discussed all the identified technical issues and agreed as described in paragraphs 6 and 7 above.

RECOMMENDATIONS

9. The Fund Secretariat recommends blanket approval of the terminal umbrella project for the foam sector of the Democratic Republic of Congo with the levels of funding and associated agency support cost as shown in the table below.

	Project Title	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
(a)	Terminal umbrella for the foam sector	640,820	48,062	UNDP

**PROJECT EVALUATION SHEET
DEMOCRATIC REPUBLIC OF CONGO**

SECTOR: Refrigeration Servicing Sector ODS use in sector (2002): 245 ODP tonnes

Sub-sector cost-effectiveness thresholds: n/a

Project Titles:

- (a) Implementation of the refrigerant management plan: customs training
- (b) Implementation of the refrigerant management plan: training of technicians in refrigeration
- (c) Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme
- (d) Implementation of the refrigerant management plan: awareness and incentive programme
- (e) Implementation of the refrigerant management plan: monitoring the activities

Project Data	Refrigerant management plan				
	(a)	(b)	(c)	(d)	(e)
Enterprise consumption (ODP tonnes)					
Project impact (ODP tonnes)			13.12		
Project duration (months)	12	9	36	36	36
Initial amount requested (US \$)	109,000	115,000	577,891	300,000	40,000
Final project cost (US \$):					
Incremental capital cost (a)					
Contingency cost (b)					
Incremental operating cost (c)					
Total project cost (a+b+c)	109,000	115,000	437,102	300,000	40,000
Local ownership (%)	100%	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%	0%
Amount requested (US \$)	109,000	115,000	437,102	300,000	40,000
Cost effectiveness (US \$/kg.)			33.3		
Counterpart funding confirmed?					
National coordinating agency		National Ozone Office			
Implementing agency	UNEP	UNEP	UNDP	UNDP	UNEP

Secretariat's Recommendations					
Amount recommended (US \$)	109,000	115,000	437,102	Defer(*)	40,000
Project impact (ODP tonnes)			13.12		
Cost effectiveness (US \$/kg)			33.3		
Implementing agency support cost (US \$)	9,810	14,950	32,783		5,200
Total cost to Multilateral Fund (US \$)	118,810	129,950	469,885		45,200

(*) Defer, to be submitted to future Meeting of the Executive Committee

PROJECT DESCRIPTION

10. The 2002 CFC data reported by the Government of the Democratic Republic of Congo (DR Congo) under Article 7 was 569.4 ODP tonnes. The CFC baseline for compliance is 665.70 ODP tonnes.

Refrigeration servicing sector

11. Of the total 2002 CFC consumption in DR Congo, 245 ODP tonnes were used in the refrigeration-servicing sector, namely 100 ODP tonnes of CFC-11, 135 ODP tonnes of CFC-12 and 10 ODP tonnes of CFC-115.

12. By type of refrigeration equipment, 190 ODP tonnes were used for servicing domestic refrigerators, 53 ODP tonnes for commercial refrigeration systems and 2 ODP tonnes for MAC units. This equipment is serviced by 50 technicians working in 15 specialized service workshops and by 4,000 service technicians (skilled and unskilled) working in 300 workshops. More than 40 per cent of the total CFC consumption in the servicing sector is used for flushing domestic refrigerators during repair.

13. The current prices of refrigerants per kg are: US \$6.90 for CFC-11, US \$6.00 for CFC-12, US \$21.50 for HFC-134a and US \$5.40 for HCFC-22.

14. Since 1995, the Government of DR Congo has drafted ODS legislation controlling importation of ODS (ministerial circular No. 9292 of 30 July 1995). However, relevant regulations are yet to be enacted.

Activities proposed in the RMP project

15. The RMP consists of the following two training programmes:

- (a) Training programme for customs officers (US \$109,000), to train customs officers on identification and control of ODS and ODS-based equipment and procurement of 20 ODS identification kits; and
- (b) Training programme for refrigeration technicians (US \$115,000), to enhance the service skill of refrigeration technicians, to introduce good service practices related to new non-CFC refrigerants and to assist the existing refrigeration associations in the country.

16. The project also contains a proposal for the establishment of four CFC recovery and recycling centres to be operated by a small number of service technicians (US \$577,891). During servicing/repair operations to a refrigeration system, technicians from the centres will accompany the service technician who will perform the repairs, to recover the CFC refrigerants from the system. The repair technician will receive credits for recycled refrigerants. The recycling centre will be provided with recovery machines, suitable for recovering CFCs and other non-CFC refrigerants provided that extra costs of the machines fall within budget. The technicians from the centres will also receive basic repair and servicing tools (including vacuum

pumps and leak detectors) to assist the technicians in performing proper servicing operations. Hands-on training on recovery and recycling techniques and proper maintenance and installation of refrigeration and air conditioning equipment will be provided to technicians at the centres.

17. The proposal includes funding for the operating costs of the centres, including transportation costs, salaries for the technicians and sundries, for a three year period. Payments for the technicians in the recycling centre will be given every six months, and will be based on the amounts of CFCs recovered and recycled. A system for monitoring the quantity and quality of the CFC recycled is planned to ensure the success of the centralized recovery and recycling programme.

18. The RMP project also proposes implementation of an awareness and incentive programme (US \$300,000) to encourage refrigeration end-users to replace or permanently retrofit their existing ODS based equipment to zero/low-ODP refrigerants. An additional US \$40,000 is requested for monitoring and management of the activities proposed in the RMP project.

19. The DR Congo RMP project was submitted with an official letter from the Government of DR Congo stating the Government's commitment to achieve, without further request for funding, at least the 50 per cent reduction in consumption of CFCs by 2005 and the 85 per cent reduction by 2007.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

20. The Secretariat pointed out that the Executive Committee allocated US \$60,000 for the preparation of the DR Congo RMP (double the amount that was approved in the past for similar activities), on the understanding that relevant ODS legislation would have been prepared at the time of the preparation of the country programme to avoid any delays in the implementation of the sub-projects in the RMP. However, as indicated in the project proposal, this legislation has not yet been approved. Subsequently, UNEP submitted to the Fund Secretariat the draft ODS regulations which are expected to be approved by Cabinet before the end of 2003.

21. Several progress reports on recovery/recycling programmes in other Article 5 countries indicate that recovered amounts of CFCs are smaller than the amounts estimated in the project proposals. In this regard the Secretariat sought an explanation from UNDP on the soundness of the assumptions made for estimating that 13.2 ODP tonnes of CFCs would be recovered in DR Congo. UNDP informed the Secretariat that in previous recovery/recycling programmes, the repair technicians carried the recovery machine and ancillaries to the repair site even though in many cases no more refrigerant was available in the refrigeration system. In the new approach, the service technicians will call the technician at the centres when there is a substantial amount of CFC to be recovered. The repair technician will have the incentive to call the centres, since he/she will receive a voucher to obtain 90 per cent of recycled refrigerant back for free. Also, payments to the technicians at the recycling centres will be based on the actual amounts of CFCs recovered/recycled.

22. UNDP also mentioned that, in case where other refrigerants are processed (HCFCs or HFCs), in addition to the CFC quotas established in the UNDP subcontract, additional resources will be available to the centres (as per relevant decisions by the Executive Committee, the extra cost to handle non-CFC refrigerants will be borne by the recipients). By the time the project is completed, and if it proves to be successful, the Government of DR Congo could request further funding in 2007 in order to maintain the centres. Furthermore, the centres may become self-sufficient if they are able to process other refrigerants in addition to CFCs.

23. The Secretariat also expressed a reservation about committing US \$300,000 for an awareness and incentive programme taking into consideration the large difference in price of CFC-12 and HFC-134a. Subsequently, UNDP indicated that the project would be deferred to a future Meeting of the Executive Committee (one or two years), until the prices of CFC and non-CFC refrigerants were to be similar.

RECOMMENDATIONS

24. The Fund Secretariat recommends blanket approval of the projects at the funding level indicated below, on the understanding that:

- (a) The Government of DR Congo would have flexibility in utilizing the resources available under the centralized recovery and recycling programme, to address specific needs that might arise during project implementation;
- (b) The sub-contracts from the centralized recovery and recycling programme would be funded in stages so that resources can be diverted to other activities, such as additional training or procurement of service tools, if the proposed results from the programme are not achieved;
- (c) The centralized recovery and recycling programme should not commence until the legislation controlling CFC imports is in place and measures have been taken to ensure that the local market prices of CFCs and non-ODS refrigerants are similar; and
- (d) UNDP and UNEP would provide appropriate monitoring throughout project implementation.

	Project Titles	Project Funding (US\$)	Support Cost (US\$)	Implementing Agency
a)	Implementation of the refrigerant management plan: customs training	109,000	9,810	UNEP
b)	Implementation of the refrigerant management plan: training of technicians in refrigeration	115,000	14,950	UNEP
c)	Implementation of the refrigerant management plan: centralized recovery and recycling of CFC-12 programme	437,102	32,783	UNDP
d)	Implementation of the refrigerant management plan: monitoring the activities	40,000	5,200	UNEP
