UNITED NATIONS

EP

United Nations Environment Programme

Distr.
LIMITED

UNEP/OzL.Pro/ExCom/38/45
28 October 2002

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-eighth Meeting
Rome, 20-22 November 2002

PROJECT PROPOSALS: NIGERIA

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

Aerosols

- Terminal phase out in the aerosol sector — UNDP

Foam

- Foam sector ODS phase-out plan — UNDP

Refrigeration

- Terminal phase-out plan in the refrigeration-manufacturing sector — UNIDO
- Terminal ODS Phase-out Management Plan for the R&AC service sector — UNDP

PROJECT EVALUATION SHEET
NIGERIA

SECTOR:	Aerosols	ODS use in sector (2000):	58 ODP tonnes
Sub-sector cost-effectiveness thresholds:		Filling plant	US $4.40/kg
SECTOR:	Foam	ODS use in sector (2000):	3,125 ODP tonnes
Sub-sector cost-effectiveness thresholds:		Flexible Rigid	US $6.23/kg US $7.83/kg
SECTOR:	Refrigeration	ODS use in sector (2000):	913.8 ODP tonnes
Sub-sector cost-effectiveness thresholds:		Commercial Domestic	US $15.21/kg US $13.76/kg

Project Titles:

(a) Terminal phase out in the aerosol sector
(b) Foam sector ODS phase-out plan
(c) Terminal phase-out plan in the refrigeration-manufacturing sector
(d) Terminal ODS Phase-out Management Plan for the R&AC service sector

Project Data	**Filling plant**	**Multiple-subsectors**	**Domestic/commercial**	**Multiple-subsectors**
	Aerosols	**Foam**	**Refrigeration**	**Refrigeration servicing**
Enterprise consumption (ODP tonnes)	58.00	1,579.77	45.00	814.63
Project impact (ODP tonnes)	58.00	1,579.77	42.90	814.63
Project duration (months)			30	96
Initial amount requested (US $)	255,000	2,569,562	771,260	823,543
Final project cost (US $):				
Incremental capital cost (a)			631,260	
Contingency cost (b)			51,126	
Incremental operating cost (c)				
Total project cost (a+b+c)	255,000	8,150,000	682,386	4,073,000
Local ownership (%)	100%	100%	100%	100%
Export component (%)	0%	0%	0%	0%
Amount requested (US $)	255,000	2,569,562	682,386	823,543
Cost effectiveness (US $/kg.)	4.40	5.12	15.94	5.00
Counterpart funding confirmed?		Yes		
National coordinating agency		Federal Ministry of Environment		
Implementing agency	UNDP	UNDP	UNIDO	UNDP

Secretariat's Recommendations				
Amount recommended (US $) Project impact (ODP tonnes) Cost effectiveness (US $/kg) Implementing agency support cost (US $)				
Total cost to Multilateral Fund (US $)				

PROJECT DESCRIPTION

Sector background

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

According to Decision 35/57 Nigeria has selected Option 2 as starting point amounting to:	2,883.3 ODP tonnes
- Remaining consumption of CFCs eligible for funding as at 38th Meeting (per Decision 35/57, proviso B)	2,597.2 ODP tonnes
- Impact of ALL CFC projects submitted for funding at the 38th Meeting	2,495.3 ODP tonnes
- Maximum remaining consumption of CFCs eligible for funding following approval of projects submitted to 38th Meeting	86.0 ODP tonnes

Introduction

1. The Government of Nigeria opted for Option 2 (2,883.3 ODP tonnes) as the starting point to determine the remaining CFC consumption eligible for funding, as adopted by the Executive Committee under Decision 35/57. Since then, the Executive Committee has approved for funding 286.1 ODP tonnes of CFCs, resulting in an unfunded CFC consumption of 2,597 ODP tonnes. According to the national phase out plans, the Government of Nigeria wishes to distribute the unfunded consumption as follows:

Aerosol sector	73.0 ODP tonnes
Foam sector	1,579.8 ODP tonnes
Institutional strengthening (US $12.10/kg)	86.0 ODP tonnes
Commercial refrigeration (manufacturing sector)	45.0 ODP tonnes
Refrigeration servicing sector	814.6 ODP tonnes

2. The Government of Nigeria has submitted to the 38th Meeting three separate national phase-out plans in the foam (UNDP), refrigeration manufacturing (UNIDO) and refrigeration servicing (UNDP) sectors, to phase out a total consumption of 2,439.4 ODP tonnes of CFCs. The three project proposals are attached to this document.

ODS regulations in Nigeria

3. Under the Guidelines and Standards for Environmental Pollution Control in Nigeria CFC-11 and CFC-12 can only be imported after clearance with the Federal Environment Protection Agency (FEPA).

4. On 19 July, 2001, the Minister of Finance issued a Circular banning the import of all used refrigerators and air-conditioners, since all second-hand refrigerators and air conditioners being imported into the country were ODS-based. In addition, there is a ban on importing cars more than 5 years old.

5. Nigeria's Federal Environmental Act is currently under finalisation by the Minister of the Environment. A national workshop is proposed to introduce the Draft Act to major stakeholders. Following this workshop, the Act will be presented to the Parliament to become law. The Draft Act states that the Minister shall, *inter alia*, in collaboration with relevant ministries, agencies and bodies, prepare and implement programmes, strategies and guidelines for the control of any substance, practice, process and activity, which may be anticipated to deplete the ozone layer.

6. The Ozone Office will implement and enforce import quotas and will study the feasibility of import concessions and tax incentives to promote use of substitutes and alternative technologies.

Foam sector

7. The remaining CFC consumption in the foam sector was identified through a survey conducted by UNDP and local consultants and audited by the Government.

8. The foam sector plan addresses predominantly CFC phase-out by flexible boxfoam producing enterprises. These enterprises account for 91% of the total CFC consumption to be phased out. For purposes of implementation, the boxfoam enterprises have been grouped by region – North, South East and South West – shown on a map attached to the sector plan. Two enterprises producing flexible slabstock foam for the furniture industry and two other enterprises producing rigid foam for thermoware, pipes and panels were also identified as eligible for funding. The following is the breakdown by sub-sector of enterprises listed in the sector plan as eligible for funding.

Sub-sector	Number of enterprises	CFC consumption (ODP tonnes)
Flexible boxfoam	110	1,643
Flexible (continuous) slabstock	2	67
Rigid foam	2	94
Total	114	1,804

9. Although the results of the survey identified a total of 1,804 ODP tonnes of CFC-11 as the consumption of enterprises certified by the Government as eligible for funding, the consumption to be funded under the sector plan was calculated on the basis of Nigeria's remaining unfunded CFC consumption in accordance with Decision 35/57. Therefore, the consumption to be funded by the Multilateral Fund under the sector plan (project impact) was calculated by the Government to be 1,579.77 ODP tonnes.

10. In addition to the 114 enterprises, 11 other enterprises considered to be ineligible for funding for various reasons were identified. These enterprises account for 120 ODP tonnes CFC-11. Thus, the total amount of CFC-11 remaining in the foam sector was found to be 1,924 ODP tonnes used by a total of 125 enterprises.

Baseline equipment

11. All the flexible boxfoam enterprises use hand-mix operations, while the two flexible continuous foam enterprises operate a Viking and a Maxfoam machine respectively and the rigid foam enterprises operate low pressure machines.

Phase-out strategy in the foam sector

12. The Government expects to eliminate the remaining CFC consumption in the foam sector through a mix of investment and non-investment activities. The non-investment activities include awareness campaigns, regulatory activities such as enforcement of quota systems, legislation, etc., and verification and monitoring of activities at enterprise level. As part of the investment activities, the Government also intends to encourage through the foam sector plan a partnership between qualified local and international equipment manufacturers to promote technology transfer. The phase-out plan is expected to be implemented over a period of four years from 2003 to 2006.

Justification for the use of HCFC-141b

13. Justification for the use of HCFC-141b by the two rigid polyurethane foam companies in the sector plan has been provided by UNDP based on technological and economic analysis of the operation of each enterprise. UNDP stated that its technical expert which pre-appraised the projects prior to preparation of the project document had discussions with government representatives on the choice of technology for replacing the CFC-based technology. The representatives were briefed in detail about the existing decisions and technological and economic impacts of the use of alternatives. The conclusions reached during the discussion formed the basis for the choice of HCFC-141b. A letter of transmittal from the Government of Nigeria endorsing the use of HCFC-141b by the enterprises is attached to the project document consistent with Decision 27/13.

Calculation of foam project costs

14. Calculation of the costs of the foam projects was based on calculation per unit project for each category of enterprises in accordance with standard calculations used for the category in question, including calculation of incremental capital and operating costs or savings. However, particularly in the case of boxfoam projects, individual cost items were adjusted to account for economy of scale, in view of the large numbers of the enterprises. In addition, some funds were estimated to cover non-investment activities, with the calculated amount for technical assistance, training and monitoring included in non-investment costs.

15. The summary of the costs and detailed calculations are provided in annexes 3 and 6 to the foam sector plan document. The following table provides a summary of the calculated costs of the various components of the sector plan.

	Item	Cost US $
I.	**Non-investment:**	
	Supervisory activities	10,000
	Supporting activities	95,000
	Technical assistance and monitoring for all 125 enterprises	200,000
	Contingency	30,500
	Sub-total	**335,500***
II.	**Investment:**	
	Flexible boxfoam projects	8,823,042
	Flexible continuous foam projects	440,095
	Rigid foam projects	282,000
	Sub-total	**9,545,137**
	Total (I + II)	**9,880,637****

* ODS consumption attributable to non-investment projects at US $12.1/kg: 27.73 ODP tonnes.
** Includes 10% contingency calculated to be US $872,650.

16. The amount of US $9,880,637 is requested as the grant for funding the foam sector plan with overall cost-effectiveness of US $6.25/kg. The table below shows the proposed schedule of payments and associated CFC phase-out targets based on the remaining fundable consumption of 1,579.77 ODP tonnes. Since the total amount of CFC to be phased out by enterprises certified as eligible for funding amounts to 1,823.3 ODP tonnes, the actual CFC to be eliminated in each year is 13.4% higher than stated in the table.

Schedule of payments and CFC phase-out targets

Year	2002	2003	2004	2005	Total
Amount requested	2,569,562	2,481,200	2,425,938	2,403,937	9,880,637
CFC phase-out target ODP tonnes	530.77	358,70	346,60	343,70	1,597.77

Refrigeration-manufacturing sector

17. The refrigeration manufacturing sector in Nigeria is comprised of fifteen major manufacturers of household refrigerators and freezers and commercial refrigeration equipment. These enterprises have received assistance from the Multilateral Fund. Three conversion projects were completed phasing out 154.9 ODP tonnes. The remaining 12 enterprises are in the process of converting to non-ODS technology to phase out 169.13 ODP tonnes additionally.

18. The significant number of imports of second hand refrigerators and freezers has a serious impact on the local manufacturing industry of household appliances. This situation had a negative effect on the implementation of ongoing projects. It is expected that the decree issued by the Minister of Finance banning imports of used refrigerators and air-conditioners will facilitate the implementation of ongoing ODS phase out projects.

19. The phase out plan has been prepared to address the remaining refrigeration manufacturing enterprises, with an estimated consumption of 45 ODP tonnes. A survey conducted in the country identified nine small- and medium-sized manufacturers of refrigeration equipment and two MAC installers (Peugeot Automobile Nigeria and Anamco). It is estimated that these enterprises consume about 80% of the total CFC in the refrigeration manufacturing sector. The annual consumption of CFCs at SMEs identified varies from 1 to 8.5 ODP tonnes. The project proposal provides information on location, year of establishment, local ownership, production, CFC consumption and baseline equipment of the enterprises.

Phase-out strategy in the refrigeration manufacturing sector

20. All the identified companies will replace CFC-11 foam blowing agent with HCFC-141b-based technology and CFC-12 with HFC-134a in their refrigerant charging operations.

21. Peugeot Automobile Nigeria assembles three models of passenger cars which are equipped with air-conditioners. The company has gradually been converting MAC charging lines from CFC-12 to HFC-134a starting from 1999. Currently one assembly line out of three is still equipped with CFC-12 based equipment.

Funding requested in the refrigeration manufacturing sector

22. The local portion of the cost (40%) of the three sets of refrigerant filling equipment at Peugeot Automobile Nigeria (US $270,000) is requested under the phase out plan. Two sets of HFC-134a charging equipment were installed about four years ago and the incremental costs are requested retroactively. Anamco is a bus assembly company installing CFC-12-based air-conditioners is planning to adopt HFC-134a-based MAC units and seeking assistance for replacement of 4 charging units at the cost of US $49,560 representing 40% local ownership.

23. In addition, the phase out plan requests funding for the new equipment required for proposed conversion, including manual charging units, vacuum pumps and a hand held leak detector for each company. Low pressure foaming machines will be replaced or modified depending on the baseline equipment and the level of CFC-11 consumption at each enterprise. Additionally, US $100,000 is requested to cover the incremental costs associated with enterprises, which have not been identified during the survey. It is estimated that these enterprises consume about 8 ODP tonnes. These enterprises will be identified and addressed in the course of implementation of the plan. The total cost of the investment component is US $870,386, including 10% contingency. The cost of technical support, awareness, inspection and monitoring, is estimated at US $120,000. The total grant requested is US $990,386, with cost-effectiveness of US $23.14/kg. No incremental operating costs are requested in the proposal.

24. According to the timetable for implementation of TPP, the project implementation will be completed in 2005. The payment of the grant is requested in two instalments: US $866,099 in 2002 and US $247,612 in 2003. The support costs of the implementing agency is calculated at US $123,325.

Refrigeration servicing sector

ODS data survey

25. The preparation of the phase-out plan in the refrigeration servicing sector was based on a survey conducted by UNDP between June 2001 and June 2002. Data collected was recorded separately for domestic, commercial and industrial refrigeration equipment and for MAC servicing. The numbers of technicians and practitioners were also determined. Questionnaires were prepared and UNDP's consultant trained local teams on how to obtain relevant information from the refrigeration-servicing sector. Within the limit of funding approved for the preparation of the RMP and given the size of the country, it was decided to divide the country into 7 zones including the Federal Capital Territory. Cities of industrial and commercial importance were identified on the assumption that most of the refrigerant consumption occurred in these cities. The data collected from the survey was extrapolated to arrive at an estimated consumption of ODS in the refrigeration servicing sector in Nigeria.

26. A total of 2,215 responses were received from the domestic sub-sector, 542 from the commercial sub-sector and 78 from the MAC sub-sector. In addition, over 1,000 questionnaires were given to the Nigeria Association of Refrigeration and Air Condition Practitioners (NARAP) who submitted around 400 responses.

27. Several problems were encountered during the survey, *inter alia*, major ODS importers refused to co-operate believing that data could be used for tax purposes; several service companies refused to co-operate despite repeated explanations; the ODS consumption data provided by NARAP was neither comprehensive nor reliable and had to be discarded; and no official reliable statistical data was available.

ODS consumption in the servicing sector

28. Notwithstanding the limitations and constraints faced during the survey, in 2001 it was estimated that about 1,443 tonnes of CFC-12 were used for servicing domestic refrigerators (1,070 tonnes), commercial refrigeration units (265 tonnes) and MAC units (110 tonnes). In addition, a consumption of 50 ODP tonnes of R-502 was also estimated.

29. It was also estimated that Nigeria has 28,000 technicians working in the refrigeration-servicing sector (however, NARAP estimated 50,000 skilled, semi-skilled and unskilled technicians). The current prices of refrigerants are: CFC-11 at US $3.57/kg, CFC-12 at US $3.67/kg, R-502 at US $13.27/kg, HCFC-22 at US $4.90/kg and HFC-134a at US $10.20/kg.

Phase-out plan in the refrigeration servicing sector

30. The following activities are being proposed for the implementation of the phase out in the refrigeration servicing sector:

(a) Finalisation and implementation of legislation and regulations (US $144,000), to develop and/or strengthen a set of regulations specific to the Montreal Protocol;

(b) Customs training programme (US $150,000), to ensure proper enforcement of import/export regulations in Nigeria including a ban on imports of CFC-based equipment. Approximately 80 national trainers will be trained who will in turn conduct ongoing training for other customs officers;

(c) Training of trainers and training of technicians and practitioners in good refrigerant management practices (US $1,929,000), to train 100 national trainers on good refrigeration servicing practices and, through them, to most or all technicians and practitioners in the country (around 28,000). Basic refrigeration servicing tools will be provided to eligible enterprises and technicians.

(d) National recovery and recycling project (US $5,100,000), to establish a national recovery and recycling scheme through 100 recovery machines, 157 recycling machines, 106 MAC recovery and recycling units all of them with ancillary equipment and 23,500 refrigeration servicing kits. Training sessions on recovery and recycling operations are also included;

(e) Incentive programme for commercial and industrial refrigeration end-users (US $1,690,000), to phase out CFC consumption through the payment of a financial incentive to enterprises in these sectors that have existing refrigeration equipment that uses CFC-12 or R502 refrigerants in food storage (cold stores and silos), fisheries, meat-processing plants, breweries, hospitals, hotels, restaurants, supermarkets or refrigerated transport;

(f) Monitoring the refrigeration service sector phase out (US $755,500), to establish a refrigeration service steering committee; the committee will meet once a year and will have professionals reporting to it who will carry out the day to day monitoring activities and advise the Ozone Unit and UNDP to take corrective action wherever necessary.

31. Implementation of the TPMP will lead to the phase out of 1,443 ODP tonnes of CFCs by the end of 2009.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

<u>CFC phase out activities in Nigeria</u>

32. The Secretariat reviewed the three national phase out plans on their own merits. On the basis of the review, the Secretariat concluded that it would be more cost-effective and sustainable to consider the three phase out plans as one national CFC phase out plan for Nigeria, with the corresponding rationalisation of resources. This approach was first discussed with UNDP (as the implementing agency with the largest phase out programme) and, subsequently, with the Government of Nigeria.

33. The Government of Nigeria agreed with the approach proposed by the Secretariat. The national CFC phase out plan could serve as a framework for monitoring and reporting CFC consumption in relation to the three sector plans and co-ordinating their implementation. An overall agreement between the Executive Committee and the Government of Nigeria could be drafted to cover the performance in terms of CFC phase out and the disbursement of funds. This would avoid the difficulty in verifying annual CFC phase-out in each of the sector plans.

34. Additionally, in each plan, funding is requested for development of policies, public awareness, project implementation management and monitoring.

35. The remainder of the Secretariat's comments pertain directly to the foam, refrigeration manufacturing, refrigeration servicing and aerosol sector plans, respectively.

Foam sector

36. The Secretariat identified some technical and cost issues related mainly to the boxfoam projects estimated at about US $80,200 per unit, which were brought to the attention of UNDP to be addressed. Following discussion of the issues between UNDP and the Secretariat, it was agreed to calculate the eligible incremental costs of projects in the sector plan on the basis of the historical average cost-effectiveness approved for foam projects for Nigeria in each sub-sector taking account of the amount of CFC-11 eligible for funding in line with Nigeria's remaining fundable consumption. The summary of the calculations is shown in the table below.

Sub-sector	Actual CFC-11* ODP tonnes	CFC-11 eligible for funding** ODP tonnes	Weighted average sub-sector cost-effectiveness US $/kg	Eligible Cost US $
Boxfoam	1,643	1,438.78	5.0	7,193,900
Flexible continuous	67	58.67	5.26	308,642
Rigid foam	94	82.32	6.62	544,958
Total	**1,804**	**1,579.77**	**5.09**	**8,047,500**

* The actual consumption of the sector based on the survey conducted in the foam sector.

** The eligible consumption based on CFC-11 allocated to the foam sector from Nigeria's fundable CFC-11 consumption.

37. Based on the above calculations, the amount of US $8,047,500 was agreed as the total investment cost of the project, resulting in a unit cost of US $65,400 for the boxfoam component of the project. In addition, an amount of US $100,000 was agreed as the management cost of the sector plan, for a total grant of US $8,150,000, with overall cost-effectiveness of US $5.16/kg (or US $4.52/kg based on the actual identified CFC consumption).

Refrigeration manufacturing sector

38. Costs requested for conversion of two MAC installers in Nigeria represent about 40% of the total cost of the investment component of the project. The Secretariat requested additional information from UNIDO regarding production, baseline equipment and specifications of the requested refrigerant filling equipment. UNIDO has provided the necessary information.

39. The Secretariat sought clarification from UNIDO regarding the eligibility of the requested funding associated with unidentified enterprises and the basis of determination of their ODS consumption at the level of 8.2 ODP tonnes. UNIDO clarified that the consumption indicated is part of eligible CFC consumption in the refrigeration sector and requested an amount of US $100,000 for unidentified enterprises which would be used, with a certain level of flexibility, by the Government of Nigeria for implementation of the project.

40. The Secretariat drew UNIDO's attention to the fact that the overall cost-effectiveness of the project in the refrigeration sector in Nigeria is US $23.14/kg, which is much higher than the thresholds established for the refrigeration sector by the Executive Committee. The experience of the Secretariat in reviewing sector and terminal phase out plans demonstrates that the formulation of sector and terminal phase out plans typically brings the sector cost-effectiveness below the threshold value.

Refrigeration service sector

41. The remaining consumption in the refrigeration-servicing sector eligible for funding would be 814.6 ODP tonnes; however, the Terminal Plan reports a consumption of 1,444 ODP tonnes in the servicing sector. The Secretariat pointed out, however, that the total amount of CFCs used in the servicing sector may be no more than 670 ODP tonnes, based on the following available information:

(a) The progress report on the implementation of the country programme (submitted by the Government of Nigeria to the Fund Secretariat), indicated that between 1998 and 2000 CFC consumption in the refrigeration sector (manufacturing and servicing) decreased from 975 ODP tonnes to 905 ODP tonnes;

(b) From the 15 investment projects in refrigeration sector (domestic and commercial) approved for Nigeria, consumption of 190 tonnes remained to be phased out at 1 January 2001;

(c) The terminal phase-out plan for the manufacturing of commercial refrigeration equipment, submitted to the 38th Meeting, addressed a consumption of 45 ODP tonnes;

(d) Accordingly, the CFC consumption in the servicing sector is estimated at 670 ODP tonnes (i.e., 905 minus 190 minus 45).

42. Taking into consideration the problems encountered during the survey, the Secretariat questioned the reliability of the consumption data estimated for the servicing sector in Nigeria. In this regard, UNDP stated that "extrapolation of data is as accurate as the best statistics used, and the main issue is the lack of base statistics, which causes sufficient margin of error. The national sub-contractor used the experience and knowledge of its activities in the country to arrive at estimates, which were discussed, and then accepted by all participants at the stakeholders workshop as being extremely conservative. The mentioned statement was included in the document upon request by the stakeholders at the workshop, to rebut any future criticism about the conservative extrapolation".

43. According to the proposal, it is estimated that Nigeria has around 28,000 technicians in the refrigeration-servicing sector. On the basis of the data reported in the project proposal, the Secretariat noted that the number of units annually serviced by these technicians by type of equipment was as low as 78 commercial refrigerators and 55 MAC units per year (see Table below). These figures would be even lower if the population of technicians is considered at 50,000 as reported by NARAP. UNDP indicated that the "units serviced per technician" was based on the data obtained from the survey and the subsequent extrapolation; it serves to emphasise that the extrapolation has been very conservative.

	Domestic	**Commercial**	**MAC**	**Total**
Survey data (technicians)	2,215	542	78	2,835
Extrapolated (technicians)	22,600	3,400	2,000	28,000
CFC-12 consumption (tonnes/year)	1,068	265	110	1,443
CFC consumption/technician (kg/year)	47	78	55	
Unit CFC-12 charge/unit (kg/unit)	0.3	1.0	1.0	
Units serviced per technician (units/year)	157	78	55	

44. The project proposal stated that "Nigeria actively wants to follow the hydrocarbon route for domestic refrigeration and will encourage conversion of existing refrigerators to hydrocarbon when compressor servicing is required". In this regard, the Secretariat pointed out that while the use of hydrocarbon blend refrigerant in equipment that was designed for CFCs has been proven to be viable and efficient, it appears that safety issues have still not been adequately resolved. It is also important to consider that a large number of the 28,000 technicians and practitioners in Nigeria has not received formal training in servicing operations. UNDP reported that the issue has to be further refined before being put into practice. One option under consideration is to license specific workshops to carry out conversion to hydrocarbon blends. "The licenses would only be given to those workshops with qualified technicians and can demonstrate adherence to safety issues. Considering that LPG is used widely for flushing, this should not be a problem".

45. The cost of the plan for the servicing sector has been requested at US $9.8 million. The Secretariat noted that the project document reported two cost effectiveness values for the terminal plan: one at US $6.56/kg if calculated against a consumption of 1,443 tonnes; and another at US $12.03/kg if calculated against a consumption of 814.6 tonnes. The Secretariat also pointed out that the cost-effectiveness of the project (US $12.03/kg) is very low compared to the cost effectiveness of the servicing sector components of the recently approved projects for Algeria (US $5.8/kg plus an additional 315 tonnes that will be phased out by the Government without further assistance from the Fund), Brazil (US $3.70/kg), Malaysia (US $5.00/kg), Thailand (US $4.40/kg) and Yemen (US $2.72/kg).

Aerosol sector

46. The phase out plans for the foam and refrigeration servicing sectors, reported a consumption of 73 ODP tonnes of CFCs in the aerosol sector. However, the progress report on the implementation of the country programme submitted by the Government of Nigeria to the Fund Secretariat, reported a consumption in the aerosol sector of 58 ODP tonnes.

47. While the phase out of CFC in the aerosol sector was not part of the sector plans submitted to the 38th Meeting, it was proposed to include it in the context of the national CFC phase out plan. Taking into consideration the relative small consumption of CFCs in this sector relatively to the remaining consumption in the country and that no funding has been approved for this sector in Nigeria, the cost of the phase out was calculated on the basis of US $4.40/kg, representing the cost-effectiveness value for the aerosol sector.

Agreed cost of the national CFC phase out plan

48. In the context of the Secretariat's comments and the clarification provided by agencies, discussions were held o the basis of the (incremental cost of a national CFC phase-out in Nigeria. Agreement has been reached on a level of funding of US $13,120,000 to phase out a total of 2,353 ODP tonnes of CFCs, with the following sectoral distribution:

Sector	**ODP tonnes**	**Cost (US$)**	**CE (US$/kg)**
Aerosol sector	58.0	255,000	4.40
Foam sector	1,579.8	8,150,000	5.12
Refrigeration manufacturing	42.9	682,386	15.94
Refrigeration servicing sector	814.6	4,073,000	5.00
Total	**2,495.3**	**13,160,386**	**5.27**

Agreement between the Executive Committee and the Government of Nigeria

49. Final discussions are being held with UNDP, UNIDO and the Government of Nigeria to closely co-ordinate the implementation of proposed sector plans and subsequently to:

(a) agree on the proposed adjustments to the budget and complete the distribution of funding in annual tranches;

(b) conclude discussion regarding support costs for implementing the plans;

(c) prepare a first implementation programme to run from November 2002 until the end of 2003;

(d) draft an Agreement between the Government of Nigeria and the Executive Committee for the national CFC phase out plan and to submit it for the consideration of the Executive Committee at its 38th Meeting.

50. The distribution of funding, the first implementation programme and the draft agreement will be posted on the Secretariat's web-site for the 38th Meeting when completed (and made available to Executive Committee members prior to the commencement of the meetings of the Executive Committee and its Sub-Committees).

RECOMMENDATIONS

51. The Executive Committee might:

(a) agree in principle that the sector plans for CFC phase-out in Nigeria in the foam, refrigeration manufacturing and refrigeration servicing sectors together with the aerosol sector, be subject to an overall performance Agreement on national CFC phase-out between the Executive Committee and the Government of Nigeria at a total cost of US $13,160,386 plus agency support costs;

(b) consider the draft agreement itself, the first implementation programme for each of the sectors covered in the agreement and the support cost for the implementing agencies involved, on the basis of the additional information to be provided by the Secretariat.

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