UNITED
NATIONS

EP

United Nations
Environment
Programme

Distr.
GENERAL

UNEP/OzL.Pro/ExCom/61/32
11 June 2010

ORIGINAL: ENGLISH

EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Sixty-first Meeting
Montreal, 5-9 July 2010

PROJECT PROPOSALS: CHINA

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

Fumigant

- National phase-out of methyl bromide (phase II, fifth tranche) UNIDO

Phase-out

- Demonstration sub-project for conversion of room A/C compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co. UNIDO
- Demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioner Manufacturing Company UNIDO

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

China

(I) PROJECT TITLE	AGENCY
Methyl bromide	Italy, UNIDO

(II) LATEST ARTICLE 7 DATA (ODP Tonnes)			Year: 2008	
CFC: 263	CTC: 219.2	Halons: 977.3	MB: 371.3	TCA: 168.3

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP Tonnes)						Year: 2008							
Substances	Aerosol	Foam	Halon	Refrigeration		Solvent	Process Agent	MDI	Lab Use	Methyl Bromide		Tobacco fluffing	Total Sector Consumption
				Manufacturing	Servicing					QPS	Non QPS		
CFC								437.8					437.8
CTC									219.2				219.2
Halons			977.3										977.3
Methyl Bromide										713.7	371.3		1,084.9
Others													0
TCA						168.3							168.3

(IV) PROJECT DATA			2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Montreal Protocol Consumption Limits		MB	1,102.1	1,102.1	1,102.1	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	0.	
Maximum Allowable Consumption (ODP Tonnes)		MB	1,087.8	1,087.8	1,087.8	880.	723.8	570.6	390.	250.	209.	176.	150.	100.	50.	0.	
Project Costs (US$)	UNIDO	Project Costs		4,086,600.				1,200,000.	1,800,000.	1,300,000.	600,000.	500,000.	500,000.	500,000.	302,742.		10,789,342.
		Support Costs		306,495.				90,000.	135,000.	97,500.	45,000.	37,500.	37,500.	37,500.	22,706.		809,201.
	Italy	Project Costs				4,000,000.											4,000,000.
		Support Costs				470,000.											470,000.
Total Funds Approved in Principle (US$)		Project Costs		4,086,600.		4,000,000.		1,200,000.	1,800,000.	1,300,000.	600,000.	500,000.	500,000.	500,000.	302,742.		14,789,342.
		Support Costs		306,495.		470,000.		90,000.	135,000.	97,500.	45,000.	37,500.	37,500.	37,500.	22,706.		1,279,201.
Total Funds Released by the ExCom (US$)		Project Costs		4,086,600.		4,000,000.		1,200,000.	1,800,000.	1,300,000.	0.	0.	0.	0.	0.		12,386,600.
		Support Costs		306,495.		470,000.		90,000.	135,000.	97,500.	0.	0.	0.	0.	0.		1,098,995.
Total Funds Requested for Current Year (US$)		Project Costs									600,000.						600,000.
		Support Costs									45,000.						45,000.

(V) SECRETARIAT'S RECOMMENDATION:	Blanket Approval

PROJECT DESCRIPTION

1. On behalf of the Government of China, UNIDO, as the lead implementing agency, has submitted to the 61st Meeting of the Executive Committee a request for funding for the implementation of the fifth tranche (2010 work programme) of phase II of the national phase-out of methyl bromide (MB) plan, at a total cost of US $600,000 plus agency support costs of US $45,000 for UNIDO. The submission also includes a progress report on the implementation of the MB phase-out plan during 2009 and the implementation programme for 2010. The project is being implemented with assistance from the Government of Italy.

Background

2. At its 44th Meeting, the Executive Committee approved in principle phase II of the national plan for the phase-out of MB in the consumption sector in China at a total funding level of US $14,789,342 (including the amount previously approved for UNIDO at the 41st Meeting to phase out 389 ODP tonnes of MB). It also approved an Agreement between the Government of China and the Executive Committee (decision 44/30). Since then, the Executive Committee has approved the first four tranches of the project at a total value of US $8,300,000 plus support costs of US $792,500 (US $470,000 for the Government of Italy and US $322,500 for UNIDO).

Progress report

3. Since 2007, MB has not been used for commodity fumigation. The technical assistance programme, initiated in 2006, has been completed. It provided technical assistance to all grain storage facilities in China through training for storage facility management and technical staff, and through the formulation of guidelines, protocols and directives for pest management. MB has not been used for the fumigation of tobacco seedlings since 2008. Technical assistance activities have been implemented to ensure the permanent and sustainable phase-out of MB, including: integrated pest management processes; assessment of alternative MB technologies in the tobacco industry; and improvement and extension of the tobacco seedling transplanting technology.

4. The phase-out of MB in the agricultural sector has been achieved through the introduction of alternative technologies, including alternative chemicals and grafting in strawberry, tomato, cucumber and ginger crops. Training material and protocols for trainers, fumigators and farmers have been developed and distributed; 1,338 technicians have been trained in alternative technologies and, through them, about 8,000 farmers have been trained. Staff from fumigation companies have also been trained in the safe and effective use of toxic fumigants. A monitoring system has been established, through which 10 per cent of all farmers using MB alternatives are randomly monitored for disease incidence, crop yields and quality.

5. The import and export licensing system has been in effect since 1 January 2004. Regulations banning the use of MB for commodity applications and for tobacco seedlings were issued in September 2006 and November 2008 respectively. Since 2008, the Government of China has enforced the established monitoring and management system for MB production.

6. As of March 2009, of the US $8,300,000 approved for the first four tranches, US $8,051,000 had been disbursed. The balance of US $249,000 was reserved for the procurement of four injection machines and other farm materials in 2009. However, they were not procured as the Technical Assistance Unit wished to assess the materials' viability and cost-effectiveness in the local conditions in China.

2010 Work programme

7. Although the use of MB has been phased out in the tobacco seedlings (2008) sector, some technical assistance activities and training programmes will continue. As several alternative technologies for soil fumigation are becoming commercially available, major stakeholders have decided to strengthen the training and education programmes so that farmers will be able to select the most cost-effective and sustainable technology according to the market, crop and pest pressure. This programme will be supported with equipment and farm materials to phase out MB consumption in strawberry, cucumber and tomato crops.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

8. The 2008 MB consumption reported by the Government of China under Article 7 of the Montreal Protocol of 371.3 ODP tonnes was already 510.4 ODP tonnes below that of 881.7 ODP tonnes allowed under the Protocol, and 18.7 ODP tonnes below that of 390.0 ODP tonnes allowed under the Agreement between the Government and the Executive Committee. MB consumption in 2009 has been estimated at 250.0 ODP tonnes, similar to the level allowed under the Agreement. Since the approval of the phase-out plan, with assistance from the Government of Italy and UNIDO, the Government of China has achieved greater reductions in MB consumption than those stipulated in the Agreement, as shown below:

	MB consumption (ODP tonnes)						
Sector/Year	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Allowable consumption							
Commodity	126.0	126.0	46.0	25.2	-	-	
Tobacco	427.8	427.8	300.0	164.6	124.6	-	
Agriculture	534.0	534.0	534.0	534.0	446.0	390.0	250.0
Total	1,087.8	1,087.8	880.0	723.8	570.6	390.0	250.0
Actual consumption							
Commodity	126.0	52.2	32.1	7.0	-	-	-
Tobacco	427.8	227.8	54.0	21.0	32.4	-	-
Agriculture	534.0	534.0	534.0	282.1	351.7	371.3	250.0
Total	1,087.8	814.0	620.1	310.0	384.1	371.3	250.0

9. During implementation of the previous tranches of the MB phase-out plan, a number of potential risks were identified for each of the major MB applications (i.e., commodities, tobacco seedlings and agriculture) and potential solutions have been suggested. These solutions have been incorporated into the 2010 work programme.

10. It is reported that the phase-out of MB in the agricultural sector has to overcome greater challenges compared to the commodities fumigation and tobacco sector, given the larger surface areas treated with MB and their geographical distribution, the variety of crops, and the absence of a structured farmers' association that would make it possible to reach large numbers of farmers. To overcome these challenges, the Government of China and UNIDO are proposing to introduce a large number of alternative technologies, increase farmers' awareness and technical knowledge so as to enable them to chose the most technically sound and economical viable alternative technology according to their specific needs, and create a market environment that will favour competition among suppliers of technologies.

RECOMMENDATION

11. The Fund Secretariat recommends that the Executive Committee:

(a) Takes note of the progress report on the implementation of the fourth tranche of phase II of the national phase-out of methyl bromide (MB) plan for China; and

(b) Approves the 2010 annual implementation programme associated with the fifth tranche.

12. The Secretariat further recommends blanket approval of the 2010 plan associated with the fifth tranche of MB phase-out, with associated support costs at the funding level shown in the table below.

	Project Title	Project Funding (US $)	Support Costs (US $)	Implementing Agency
(a)	National phase-out of methyl bromide (phase II, fifth tranche)	600,000	45,000	UNIDO

PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECTS
CHINA

PROJECT TITLE		BILATERAL/IMPLEMENTING AGENCY
(a)	Demonstration sub-project for conversion of room A/C compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co.	UNIDO
(b)	Demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioner Manufacturing Company	UNIDO

NATIONAL CO-ORDINATING AGENCY	Foreign Economic Cooperation Office, Ministry of Environmental Protection (FECO/MEP)

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2008, AS OF JUNE 2010)

Annex C, Group I	15,387.2

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2008, AS OF JUNE 2010)

Substance	Consumption (ODP tonnes)
HCFC-22	9,559.58
HCFC-141b	4,415.31
HCFC-142b	1,096.06
Other	9.23

HCFC consumption remaining eligible for funding (ODP tonnes)	n/a

		Funding US $	Phase-out (ODP tonnes)
CURRENT YEAR BUSINESS PLAN ALLOCATIONS	(a)	6,000,000	0
	(b)	6,000,000	13.2

PROJECT TITLE:	Guangdong Meizhi	Midea
ODS use at enterprise (ODP tonnes):	693	693
ODS to be phased out (ODP tonnes):	0	13.2
Project duration (months):	26	26
Project costs (US $):		
Incremental Capital Cost:	2,864,857	3,218,979
Contingency (10 %):	260,143	270,905
Incremental Operating Cost:	0	1,512,000
Total Project Cost:	3,125,000	5,001,884
Local ownership (%):	60	80
Export component (%):	0	0
Requested grant (US $):	1,875,000	4,026,507
Cost-effectiveness (US $/kg):	N/A	16.77
Implementing agency support cost (US $):	140,625	301,988
Total cost of project to Multilateral Fund (US $):	2,015,625	4,328,495
Status of counterpart funding (Y/N):	Letters of commitment received	Letters of commitment received
Project monitoring milestones included (Y/N):	Y	Y

SECRETARIAT'S RECOMMENDATION:	For individual consideration	For individual consideration

PROJECT DESCRIPTION

Introduction

13. UNIDO, on behalf of the Government of China, has submitted to the 61st Meeting one demonstration project with two sub-projects, entitled "Demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-Conditioner Manufacture Company" and "Demonstration sub-project for conversion of room air-conditioner compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co.". The project preparation funding for these two projects had been approved at the 57th Meeting. The two components are demonstrations of the conversion of a manufacturing line for air-conditioning equipment and one for its main component, the compressor, with phase out of 240 metric tonnes (13.2 ODP tonnes) of HCFC-22, to be replaced by the hydrocarbon HC-290, propane. The funding originally requested for the implementation of the two projects was US $7,645,989 plus support cost of US $567,000, which was then reduced in agreement with the agency to a level of US $5,901,507 plus support cost of US $442,613.

14. According to the 2008 country programme data, China is consuming 15,080.21 ODP tonnes of HCFCs, mainly consisting of HCFC-22 (66 per cent), HCFC-141b (27 per cent) and HCFC-142b (7 per cent). HCFC-22 is mainly used in the foam and refrigeration manufacturing sectors as well as in the refrigeration service sector. The project document proposes to convert one production line of 200,000 split room air conditioning (RAC) units and one production line of 1,830,000 compressors. It is expected that the project will represent a major breakthrough in the availability of hydrocarbon refrigeration technology and lead to a broader application of propane in the refrigeration sector. The availability of HC-290 compressors was globally one of the mayor obstacles for the manufacturing of HC-290-based air conditioners on a significant scale.

Room air-conditioner (RAC) manufacturing sector profile

15. The RAC manufacturing sector started to develop in 1978 in China. With the economic growth of the country, the sector experienced rapid growth over several decades. In 2008, the total production of RAC in China reached 75,600,000 units, among these, around 20,000,000 units are exported. The number of RAC manufacturers has dramatically increased since the 1980s and dropped afterwards from hundreds to dozens through decades of strong competition. Today the production capacity is mainly located in three regions, the Pearl Delta, the Youngtze River Delta and the Bohai Sea.

16. HCFC-22 is the main refrigerant used in the RAC sub-sector. Apart from HCFC-22, HFC-410A is also used in products exported to non-Article 5 countries and for high-end domestic needs. The RAC sub-sector is the largest consumer of HCFC-22 in China, with 66,100 metric tonnes (3,636 ODP tonnes) consumed in the manufacturing and 20,000 metric tonnes (1,100 ODP tonnes) in the service in 2008. These account for 34 per cent and 10 per cent of the total national HCFC-22 consumption, respectively. The phase out of HCFC-22 in the refrigeration, and related servicing sector is crucial for China to comply with the accelerated HCFC phase-out under the Montreal Protocol, and the RAC sub-sector is a very significant contributor to reaching that target. An additional important global benefit is that with China converting more and more of its RAC manufacturing industry to refrigerants other than HCFC, RAC with alternative technologies will become increasingly available for other Article 5 countries, and to increasingly competitive prices as compared to HCFC-22. This should support those other Article 5 countries in their efforts to reduce their subsequent HCFC consumption in the service of RAC; this is in particular true of alternatives with a low climate impact.

Technology selection

17. The project proposal provides a detailed review of the technology options available at the present time in the context of their technical and economic viability and environmental performance. Two groups of non-ODS refrigerants, HFC and HC, were investigated and compared, including HFC-407C,

HFC-410A, HC-290 and HC-1270. The HFC blends, in particular HFC-410A, have already been used in products and are mature technologies; however, due to their high GWP, these refrigerants - once emitted –contribute significantly to climate change and are regulated under the Kyoto Protocol. HC-290 as a hydrocarbon refrigerant has been considered as substitute due to its similar performance to HCFC-22. The industry believes that HC refrigerants have advantages especially for the manufacture of low capacity, split air-conditioners, despite of flammability issues.

Company profile

18. The project will be implemented in two companies, Midea Room Air-conditioner Manufacturing Company and Guangdong Meizhi Co., both located in the Pearl Delta area of Guangdong province. Midea was jointly funded by Guangdong Midea Electric Appliances Inc. (80 per cent share) and Toshiba-Carrier Corporation (20 per cent share) in 2000. It has 75 RAC production lines and a yearly production (2008) of 20 million units. The company's HCFC-22 consumption (2009) amounted to 12,600 metric tonnes (693 ODP tonnes). The total sales of Midea accounts for 20 per cent of the market share in China in 2009. Midea produces a range of RAC products, from split and window units to cabinets and portable units. 75 per cent of its products are sold in the domestic market and 25 per cent exported; however, the products manufactured on the line to be converted are for the domestic market only. Midea has undertaken efforts in research and development to accelerate the phase-out of HCFC-22 and gained certain experience and insight on the characteristics of the substitute refrigerants. All the work previously conducted by the enterprise lays a good foundation for the proposed project.

19. Guangdong Meizhi Co. is also jointly owned by Midea Electrical Appliances (60 per cent) and Toshiba (40 per cent). The company mainly produces compressors in three factories, one located in Anhui province and two in Shunde, Guangdong province. The demonstration project will be conducted in one of the two factories in Shunde. In 2008, Guangdong Meizhi produces 18.4 million RAC compressors, which accounts for 25 per cent of the domestic market or 20 per cent of the world's RAC compressor market.

Production facilities and conversion activities foreseen in the project proposal

Midea Room Air-Conditioner Manufacturing Company

20. For the introduction of HC-290 technology, the equipment in the RAC production process will need significant modification or replacement, mainly related to safety requirements, including the related reduced charge of refrigerant. A series of safety devices are required to be installed in areas where refrigerant is handled, and safety measures need to be introduced to the product design. In the converted product, the refrigerant charge will be reduced from around 1,200 g to 300 g per unit, which will require major changes in the configuration of the product components including heat exchanger and compressor; these changes contribute to the major part of the incremental capital cost of the project. Further costs are related to the testing equipment, both in manufacturing as well as in product development. In Midea, the assembly line has to be converted, specifically: leak testing in two stages, vacuum pumps, refrigerant supply and charging, function testing and electrical safety tester. In the heat exchanger manufacturing, modifications are necessary for a number of stages in the process, among them the high speed fin presses and hair-pin tube bending machines. The equipment to be purchased includes, inter alia, leak detectors, safety systems including ventilation, performance test equipment and life test units.

Guandong Meizhi compressor

21. The compressor is a crucial component of the air-conditioner. Due to the change of working pressure and temperature and additional ex-proof requirements, the compressor production line needs significant modification and optimization. The structure of the compressor will undergo a re-design to minimise the vapour volume containing HC-290. In addition, new equipment is required for lubricant

handling, safety control and enhanced ventilation, performance testing with HC-290. A list of the intended new equipment is provided in Table 1 below.

Table 1 - New equipments to be purchased for compressor conversion line

Items	No.	Piece	Production Line
Production Line	1	1	Components and materials for lubricant handling system conversion
Operating Performance Test Equipment	1	1	Gas concentration alarm and ventilation system
	2	1	Lubricant viscosity meter
	3	1	Calorimeter
	4	1	Life test unit
	5	1	Load test unit for testing start up, normal and high load operating parameters, oil discharge, noise and vibration

Technical assistance and operating costs

22. As the technology using HC-290 needs to address flammability issues, significant research, redesign and training are required. UNIDO and the Secretariat agreed on eligible funds for technical assistance related to design and conversion, research on lubricant, and training of staff, totalling US $440,800 for the air-conditioner conversion sub-project and US $335,250 for the compressor conversion sub-project. An agreement was also reached on the eligible incremental operating cost (IOC) of US $1,512,000 for the manufacturing of the air-conditioners. For the compressor conversion no IOC is requested. All these amounts are further subject to a reduction according to the share of ownership from non-Article 5 countries.

Implementation arrangements

23. The Foreign Economic Cooperation Office, Ministry of Environmental Protection (FECO/MEP) would be responsible for the overall project coordination and assessment. UNIDO will be responsible for the financial management of the grant. Specification for any of procurement and contracts will be developed by UNIDO in consultation and agreement with the enterprise. Redesign, testing and training of personnel will be conducted by the enterprise management under a UNIDO contract. UNIDO is also to assist the enterprise by carrying out equipment procurement, technical information update, monitoring the progress of implementation, and reporting to the Executive Committee. Financial management will be administered by UNIDO based on the implementing agency's rules and regulation. It is expected that the project will be completed by the end of 2012.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Environmental issues

24. The sub-project at Guandong Meizhi compressor, relating only to a component of air conditioning systems, is not considered here in terms of impact on ozone or climate, since this would likely result in a double counting. The results of the calculation regarding the climate impact, using the Multilateral Fund climate impact indicator (CII), are shown in Table 2. Even with the limited amount of air conditioning units produced on this particular manufacturing line, i.e. 200,000 units per year, the savings in terms of CO_2 equivalent using HC-290 appear significant at a level of more than 250,000 tonnes of CO_2 per year of manufacturing, seen over the lifetime of the product. The impact was also calculated for HFC-410A, using for this example a reduced refrigerant filling (90 per cent) for

HFC-410A resulting in 69,085 CO_2 tonnes; this hypothetical case would like necessitate, though, a conversion of the heat exchanger manufacturing to achieve a lower refrigerant filling. The climate impact without a reduction of filling would be 99,660 tonnes of CO_2 equivalent above the level of HCFC-22.

Table 2 - Results of calculations of the climate impact using the CII

Input			
	Generic		
	Country	[-]	**China**
	Company data (name, location)	[-]	**Midea Room Air-conditioner Manufacture Company**
	Select system type	[list]	Air conditioning
	General refrigeration information		
	HCFC to be replaced	[-]	HCFC-22
	Amount of refrigerant per unit	[kg]	1.2
	No. of units	[-]	200,000
	Refrigeration capacity	[kW]	2.6
	Selection of alternative with minimum environmental impact		
	Share of exports (all countries)	[%]	0
	Calculation of the climate impact		
	Alternative refrigerant (more than one possible)	[list]	HC-290

NOTE

All data displayed is specific to the case investigated and is not generic information about the performance of one alternative; performance can differ significantly depending on the case.

Output	*Note: The output is calculated as the climate impact of the refrigerant systems in their life time as compared to HCFC-22, on the basis of the amount produced within one year. Additional/different outputs are possible*		
	Country		**China**
	Identification of the alternative technology with minimum climate impact		
	List of alternatives for identification of the one with minimum climate impact	[Sorted list, best = top (% deviation from HCFC)]	HC-600a (-34.9%) HC-290 (-30.3%) HFC-134a (-7.5%) **HCFC-22** HFC-407C (2.7%) HFC-410A (8.2%) HFC-404A (44.1%)
	Calculation of the climate impact of the conversion		
	Alternative refrigerant 1		**HC-290**
	*Total direct impact (post conversion – baseline)**	*[t CO2 equiv]*	*4,997*
	*Indirect impact (country)***	*[t CO2 equiv]*	*-260,624*
	*Indirect impact (outside country)***	*[t CO2 equiv]*	*0*
	Total indirect impact	*[t CO2 equiv]*	*-260,624*
	Total impact	**[t CO2 equiv]**	**-255,627**
	Alternative refrigerant 2		**HFC-410A**
	*Total direct impact (post conversion – baseline)**	*[t CO2 equiv]*	*11,648*
	*Total indirect impact (country)***	*[t CO2 equiv]*	*57,437*
	*Total indirect impact (outside country)***	*[t CO2 equiv]*	*0*
	*Total indirect impact**	*[t CO2 equiv]*	*57,437*
	Total impact	**[t CO2 equiv]**	**69,085**

*Direct impact: Different impact between alternative technology and HCFC technology for the substance-related emissions.
**Indirect impact: Difference in impact between alternative technology and HCFC technology for the energy-consumption-related emissions of CO2 when generating electricity.

Eligibility

25. The project involved two enterprises in the air conditioning sector and its component compressor manufacture in China. Both enterprises are partly owned by companies from non-A5 countries. Midea has 80 per cent local ownership and Guangdong Meizhi 60 per cent local ownership. The funding calculation has taken the foreign ownership component into consideration and discounted the eligible cost proportionally.

26. The Executive Committee has not yet concluded its deliberation whether to fund component manufacturing and manufacturers; this is the subject of document UNEP/OzL.Pro/ExCom/61/51 and will be discussed under agenda item 10 (b) of the 61st Meeting. Therefore, it remains presently unclear whether: the conversion of the heat exchanger manufacturing should be funded; the conversion of the compressor manufacturer should be funded; whether IOC should be calculated on the level specified in decision 60/44, or whether reduction on IOC needs to be taken into account related to the fact that the compressor conversion is being funded and therefore the IOC for compressors might be considered lower. Regarding the latter issue, in the project proposal, UNIDO justified IOC of US $14 for each of the 200,000 units produced, plus US $5.50 for compressor component for these IOC standing; consequently the remaining value for IOC without calculation for the compressor would be US $9.50. The level of IOC for air conditioning projects according to decision 60/45 is US $6.30.

Costs

27. The incremental costs for the conversion of the air-conditioner line, as agreed between UNIDO and the Fund Secretariat pending the decision related to agenda item 10 (b) of the 61st Meeting, amount to US $4,026,507, with a detailed breakdown shown in the following Table 3.

Table 3 - Cost breakdown for air-conditioner production line conversion at Midea

Item	Cost (US $)
Modification of assembly line	791,000
Modification of heat-exchanger production line[1]	*868,300*
Test, recovery and installation tools	1,049,754
Technical assistance	301,000
Trials and pilot production	69,125
Training	139,800
Subtotal	*3,218,979*
Contingency 10%	*270,905*
Total ICC	*3,489,884*
IOC[1]	*1,512,000*
Total project cost	*5,001,884*
Minus 20% share of non-A5 country ownership	*-1,000,377*
Workshop for dissemination of experience of the demonstration project to other enterprises	25,000
Grant requested	*4,026,507*

[1] Subject to any decision the Executive Committee might wish to take under agenda item 10(b) of the 61st Meeting; all cost items possibly affected by the decision are shown in *italics*

28. The capital costs for the conversion of compressor line amount to US $3,125,000, using as a basis the eligible incremental cost which was agreed between UNIDO and the Secretariat at a level of US $1,875,000. UNIDO had based its original request on capital cost of conversion of US $4,096,154.

Table 4 -Cost breakdown for air-conditioner production line conversion[2]

Items	Cost (US $)
Capital cost:	3,125,000
Incremental Operating Cost:	0
Local ownership (%):	60
Export component (%):	0
Eligible costs	1,875,000
Requested grant (US $):	1,875,000

29. From a technical perspective, the Secretariat can recommend to approve both sub-projects at the levels indicated. However, since the eligibility of several parts of the overall project remain unclear, pending discussions under agenda item 10 (b) of the 61st Meeting (see paragraph 26 above), the Secretariat took this into account when proposing a related decision.

RECOMMENDATION

30. The Executive Committee may wish to consider:

(a) Subject to the result of discussions under agenda item 10 (b):

(i) Whether to approve the demonstration sub-project for conversion of room A/C compressor manufacturing from HCFC-22 to propane at Guangdong Meizhi Co. at a level of US $1,875,000 plus agency support cost of US $140,625 for UNIDO;

(ii) Whether to approve the heat exchanger component of the demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioner Manufacturing Company;

(iii) Whether to use the incremental operating cost (IOC) as per decision 60/44, for the calculation of IOC for the demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioner Manufacturing Company or whether to modify the calculation of IOC, and how this modification would be calculated;

(b) Approving the demonstration sub-project for conversion from HCFC-22 to propane at Midea Room Air-conditioner Manufacturing Company at a level of US $4,026,507, plus agency support cost of US $301,988 for UNIDO, or a revised level as per sub-paragraphs (a) (ii) and (a) (iii) above;

(c) Requesting UNIDO and the Government of China to deduct 13.2 ODP tonnes of HCFCs (240 metric tonnes of HCFC-22) from the starting point for sustained aggregate reductions in eligible consumption, as set by China's HCFC phase-out management plan;

[2] Subject to any decision the Executive Committee might wish to take under agenda item 10(b) of the 61st Meeting; all cost items possibly affected by the decision are shown in *italics*

(d) Requesting UNIDO to provide to the Secretariat at the end of each year of the project's implementation period, or part thereof, progress reports that addressed the issues pertaining to the collection of accurate data in line with the objectives of decision 55/43(b); and

(e) Noting that the funding provided under this demonstration project is not indicative for future funding levels of similar conversions.
