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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Fifty-sixth Meeting
Doha, 8-12 November 2008

PROJECT PROPOSALS: CHINA

Aerosol	
• Sector plan for phase-out of CFCs consumption in MDI sector	UNIDO
Foam	
• Sector plan for phase-out of CFC-11 in the China foam sector: 2009 annual programme	World Bank
Halon	
• Sector plan for halon phase-out: 2009 annual programme	World Bank
Process agent	
• Phase-out the production and consumption of CTC for process agent and other non-identified uses (Phase I): 2009 annual programme	World Bank
• Phase-out the production and consumption of CTC for process agent and other non-identified uses (Phase II): 2009 annual programme	World Bank
Production	
• Sector plan for CFC production phase-out: 2009 annual programme	World Bank
• Strategy for gradual phase-out of 1,1,1-trichloroethane (TCA) production (second stage programme)	
• Sector plan for the phase-out of methyl bromide production : work programme covering 2008-2010 (phase II) and verification report on methyl bromide feedstock use for the period 2005-2007	UNIDO
Refrigeration	
• Refrigeration servicing sector CFC phase-out plan (fifth tranche)	UNEP, UNIDO and Japan
Solvent	
• ODS phase-out in China solvent sector: 2009 annual programme	UNDP

PROJECT EVALUATION SHEET – NON-MULTI-YEAR PROJECT
CHINA

PROJECT TITLE	BILATERAL/IMPLEMENTING AGENCY
Sector Plan for Phase-out of CFC Consumption in MDI Sector	UNIDO

NATIONAL CO-ORDINATING AGENCY	Ministry of Environment Protection (MEP) State Food and Drug Administration (SFDA)

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2007 AS OF SEPTEMBER 2008)

CFC	5,832.1		

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2007, AS OF SEPTEMBER 2008)

ODS	Aerosol	MDI			
CFC-11	88.0	46.0			
CFC-12	352.0	294.5			
CFC-114					
Total	440.0	340.5			

CFC consumption remaining eligible for funding (ODP tonnes)	423.2

CURRENT YEAR BUSINESS PLAN ALLOCATIONS	Funding US $	Phase-out ODP tonnes
	13,000,000	250

PROJECT TITLE:	
ODS use at enterprise (ODP tonnes):	340.5
ODS to be phased out (ODP tonnes):	322.5
ODS to be phased in (ODP tonnes):	n/a
Project duration (months):	40
Initial amount requested (US $):	18,850,502
Final project costs (US $):	
Incremental Capital Cost:	16,299,000
Contingency (10 %):	420,400
Incremental Operating Cost:	1,989,502
Total Project Cost:	
Local ownership (%):	100
Export component (%):	None
Requested grant (US $):	18,708,902
Cost-effectiveness (US $/kg):	58.01
Implementing agency support cost (US $):	1,403,168
Total cost of project to Multilateral Fund (US $):	20,112,070
Status of counterpart funding (Y/N):	Y
Project monitoring milestones included (Y/N):	Y

SECRETARIAT'S RECOMMENDATION	For individual consideration

SECTOR PLAN FOR PHASE-OUT OF CFC CONSUMPTION IN MDI SECTOR

PROJECT DESCRIPTION

1. On behalf of the Government of the People's Republic of China (China), UNIDO has submitted a sector plan to phase out 322.5 ODP tonnes of CFCs used in the manufacture of metered dose inhalers (MDI Sector Plan) for consideration by the Executive Committee at its 56th Meeting. The total cost of the project, as submitted, is US $18,850,502 plus agency support costs of US $1,413,788 for UNIDO. Once this project is approved, there will be no more CFC consumption eligible for funding in China.

2. The MDI Sector Plan submitted to the 56th Meeting is similar to that considered at the 55th Meeting. Therefore, the Secretariat has prepared this document on the basis of the document submitted to the 55th Meeting. (UNEP/OzL.Pro/ExCom/55/27), and for ease of reference, any revised or new text has been introduced in italics.

Background

3. *The MDI Sector Plan has been submitted to the 53rd and 55th Meetings, and the Executive Committee has taken the following decisions*:

(a) At its 53rd Meeting, the MDI Sector Plan proposed to phase out 280.9 ODP tonnes of CFCs used in the manufacture of MDIs, at a total cost of US $22,316,189 plus agency support costs of US $1,673,714. An informal contact group was established to discuss issues concerning the high costs of the proposal, the fact that several MDI plants had begun production as late as 2006, and the fact that the Government could still apply for critical-use exemptions in the future. Following deliberations, the Executive Committee deferred consideration of the project proposal to the 54th Meeting and requested the Government of China and UNIDO to take into consideration industrial rationalization and cost-effectiveness when resubmitting a revised project proposal (decision 53/23);

(b) The MDI Sector Plan, which had addressed the issues previously raised by the Committee, was re-submitted to the 55th Meeting. Subsequent to the report by the facilitator of the contact group that was established by the Executive Committee to consider the matter further, a Member from China said that phase-out of CFC consumption in the MDI sector presented particular challenges, including the large number of enterprises and formulations involved, the lack of technical resources for conversion, the use of medicines unique to China, the complexity of the national drug approval process and the time needed for the market and patients to accept changes in the sector. Another Member said that nearly all MDI units produced and sold in China used only six active ingredients. Production of MDIs with several other active ingredients had commenced only in 2006 and 2007, and it was not the responsibility of the Fund to address such production; a large number of non-CFC treatments were available in China for patients with asthma and chronic obstructive pulmonary disease; and there was also a need for industrial rationalization, whether through stricter regulatory controls or the operation of market forces. The Executive Committee then decided not to approve the request for funding for the phase-out of CFCs in the MDI sector in China at the current time, and requested China and UNIDO to review the project for consideration at a future Meeting (decision 55/41).

4. Taking into consideration the complexity of the project proposal, and to facilitate its consideration by the Executive Committee, the Secretariat has revised this document on the basis of the ones submitted to the 53rd (*UNEP/OzL.Pro/ExCom/53/28*) and 55th (UNEP/OzL.Pro/ExCom/55/27) Meetings. Those two versions of the document consist of the following sections:

(a) Project summary, providing a brief explanation of the activities undertaken by UNIDO in addressing the issues raised by the Committee at its 53rd Meeting (i.e., CFC consumption, production of DPIs, industrial rationalization, and capital and operating costs);

(b) Analysis of the MDI production facilities, taking into consideration the additional and/or revised information gathered by UNIDO;

(c) CFC requirement for MDI production post 2009;

(d) Selection of alternative technologies;

(e) Technical assistance activities;

(f) Capital and operating costs;

(g) Cost-effectiveness, and

(h) A proposal by the Secretariat.

Project summary

5. According to the MDI Sector Plan, there are 38 MDI manufacturing plants in China, with 104 production licenses. Sixteen manufacturing plants with 36 licenses have reported production in 2007[1] while 18 plants have not reported production for that year. The remaining five plants are owned by multinational corporations (one of which ceased production in 2005).

6. In the revised MDI Sector Plan, UNIDO has addressed the issues that were raised by the Executive Committee at its 53rd and *55th Meetings*, as follows:

(a) CFC consumption: Based on the additional information gathered by UNIDO through site visits and a review of invoices and reports on production, sales and inventories, the level of CFC consumption used for the production of MDIs has increased from 280.9 ODP tonnes to 341.0 ODP tonnes, of which 322.5 ODP tonnes are eligible for funding;

(b) Dry powder inhalers (DPIs): The State Food and Drug Administration has considered the feasibility of starting production of DPIs at one or more of the MDI manufacturing plant and concluded that, at present, this option is not feasible for the following reasons: a new registration process has to be applied for DPIs; production of DPIs require new production lines that would need to be purchased and installed; dosing units would need to be imported, and installation of a plant to manufacture dosing units would require substantial resources and involves patent rights; the current price of the DPIs on the market in China is about five times more than MDIs; and a foreign company is establishing a DPI manufacturing facility in China to address the available niche market for DPIs (there seems to be no place on the market for another new DPI producer);

(c) Availability of non-CFC treatments in China: Although there are many approved non-CFC-MDIs in China, these are produced by enterprises in England and France. Furthermore, these treatments are not available for most patients in the country since their price is ten times that of locally manufactured MDIs, and expensive non-MDI-based treatments are not in the list of medicines suggested for the rural cooperation medical system (in China rural patients are the most important and largest group of MDI users);

[1] The 16 enterprises hold an additional 22 licenses without production.

(d) *Cut-off date: The cut-off date proposed in the MDI Sector Plan is 30 November 2004. Only those production facilities that were installed before that date would be eligible for funding (i.e., Jewim Pharmaceutical (Shandong) (1993), Jinan Weimin Pharmaceutical (1979), Penglai Nuokang Pharmaceutical (1993), Sine Pharma Laboratory of Shanghai Pharmaceutical (Group) (1982), Chongqing Kerui pharmacy (1975), Guangdong Tongde Pharmacy (1993), Shandong Lunan Beite Pharmaceutical (2001), No.1 Pharmaceutical of Wuxi Shanhe Group (1965), Guangzhou Dongkang Pharmaceutical (1988), Pharmaceutical Factory of Shanxi Medical University (1994), Beijing Haiderun Pharmaceutical (1978), Harbin Hengcang Pharmaceutical (1993), Guiyang Dechangxiang Pharmaceutical (1979), Heilongjiang Tanglong Pharmaceutical (1997), Shandong Linuo Kefeng Pharmaceutical (1991), Zigong Chenguang Pharmaceutical (1981)). MDIs No. B14 and No. B07 produced by Penglai Nuokang were approved by the State Food and Drug Administration in 2000 and 1989, while No. B09, No. B01 and No B14 produced by Shanghai Pharmaceutical were all approved in 1995*;

(e) Industrial rationalization: *During the site visits and data survey carried out in early 2008, relevant authorities talked to stakeholders representing the smaller and less viable MDI manufacturing enterprises about seriously considering participating in an industrial rationalization process. It was found, however, that none of the enterprises were willing to abandon their MDI production lines and production licenses on a voluntary basis. As a result, the possibility of forced rationalization was investigated. It was found that, within the current legal framework, there are no legal instruments in China to enforce enterprise closure or consolidation*. Thus, the only viable option to curb the production of small MDI producers through consolidation is to use market forces in the form of incentives and disincentives for 44 of the total 77 production licenses:

(i) For manufacturing plants without baseline-year production, US $20,000 will be paid per available license, as partial compensation for giving up their production license;

(ii) For the plants with very low baseline-year production (less than 5 ODP tonnes of CFCs), US $20,000 will be paid per available license as partial compensation for registering or abandoning their production licenses, and an additional US $50,000 will be paid for either destruction of equipment and abandoning production or as a one time contribution to the capital and operating costs; and

(iii) *The cost of acquiring patents will be compensated partially and mainly to the large MDI manufacturing enterprises. The small-sized enterprises would receive hardly any compensation for the acquisition of patents from the Fund;*

(iv) The Government of China and UNIDO are of the opinion that, using this approach, industrial rationalization will be achieved through market forces as some MDI manufacturing plants could face difficulties in the future to raise funds for the conversion of their CFC-based production lines and would have to consider giving up as independent MDI manufacturers. Other plants could decide to pay the cost of the conversion of their production lines through other funding sources outside the Fund. This will lead to the production of MDIs in the country at a lower number of plants with larger capacity and with higher economic and technical viability. The proposed approach is also aimed at improving the cost-effectiveness of the sector plan in response to decision 53/23 of the Executive Committee.

(f) Capital and operating costs: The capital and operating costs of the MDI sector have been estimated as follows:

(i) Capital costs have been calculated according to the level of CFC consumption at the plant level: US $50,000 per production line for plants with an annual CFC consumption below 5 ODP tonnes (10 plants); US $200,000 for production lines with an annual CFC consumption between 5 and 50 ODP tonnes (2 plants); US$ 680,000 for production lines with an annual CFC consumption between 50 and 100 ODP tonnes (3 plants); and US $1,320,000 for one plant with an annual consumption above 100 ODP tonnes;

(ii) Costs for acquisition of patents will be paid partially, mainly to large manufacturing plants, while small plants would receive very limited or no compensation from the Fund;

(iii) Operating savings have been calculated over a one-year period.

7. After taking into account the above points, the total cost of the revised MDI Sector Plan is US $18,850,502, which is US $3,465,687 less than the total cost of the project submitted to the 53rd Meeting, as shown in Table 1 below:

Table 1. Summary of the total cost of the MDI Sector Plan for China

Cost item	Total cost (US $)		
	55th Meeting	**53rd Meeting**	**Difference**
Technical assistance	1,100,000	1,100,000	-
Patent cost	2,600,000	-	(2,600,000)
Dossier for licenses in production in 2007 (*)	6,435,000	7,020,000	585,000
Dossier for licenses not in production in 2007	880,000	3,485,000	2,605,000
Plant modifications of existing facilities	4,260,000	5,560,000	1,300,000
Production validation (per production line)	720,000	680,000	(40,000)
Training programme (per production line)	440,000	412,500	(27,500)
Operating cost	1,989,502	3,502,689	1,513,187
Contingency	426,000	556,000	130,000
Total	**18,850,502**	**22,316,189**	**3,465,687**

(*) Includes study of production process, study of quality, pharmacological study, toxicological study, special safety test and clinical test.

8. A copy of the MDI Sector Plan as submitted by UNIDO *was attached to document* (*UNEP/OzL.Pro/ExCom/53/28*).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Analysis of the MDI production facilities

9. In reviewing the information presented in the MDI Sector Plan, the Secretariat noted as follows:

(a) CFC consumption for the production of MDIs increased from 152.1 ODP tonnes in 2004 to 340.5 ODP tonnes in 2007. Doctors are now using MDIs more frequently to treat

patients with asthma and chronic obstructive pulmonary disease (COPD), instead of traditional treatments;

(b) Seven MDI manufacturing plants are also producing pharmaceutical aerosols in China.[2] Some of these plants have received funding for the conversion of pharmaceutical aerosol production lines to non-CFC propellant, for technical assistance, and for training programmes. These plants have different production lines and licenses for MDIs;

(c) Three transnational corporations[3] have been producing MDIs over the last three years, as shown in Table 2 below. No capital and operating costs are being requested for the conversion of these plants:

Table 2. Production of MDIs by multinational corporations

No.	Company name	Product	Active ingredient	CFC 2005 (kg)	CFC 2006 (kg)	CFC 2007 (kg)
1	AstraZeneca Pharmaceutical	B04	Budesonide	3,494.0	4,538.0	
1	AstraZeneca Pharmaceutical	B13	Terbutaline sulfate	7,460.0	8,665.0	
3	Beijing Shengdelaibao Pharmaceutical	B15	Salbutamol	745.9		730.0
3	Beijing Shengdelaibao Pharmaceutical	B01	Beclometasone dipropionate	180.3		
31	Weifang Zhongshi Pharmacy	B01	Beclometasone dipropionate	-	-	57.0
31	Weifang Zhongshi Pharmacy	B15	Salbutamol	1,350.0	900.0	597.0
31	Weifang Zhongshi Pharmacy	B16	Salbutamol (suspension)	-	-	70.7
Total				**13,230.2**	**14,103.0**	**1,454.7**

UNIDO indicated that the funding level requested for the above-mentioned plants had taken into consideration their low levels of production.

(d) Three manufacturing plants started production of MDIs only in 2006 with a major reduction in production in 2007, as shown in Table 3 below:

[2] The seven plants are: Beijing Haiderun Pharmaceutical (No. 2); Guangzhou Dongkang Pharmaceutical (No.8); Guiyang Dechangxiang Pharmaceutical (No. 9); Heilongjiang Tanglong Pharmaceutical (No. 16); Penglai Nuokang Pharmaceutical (No. 19); Shanghai Pharmaceutical Group (No. 28); and Wuxi Shanhe Group (No. 32).

[3] An additional multinational corporation, GlaxoSmithKlein, stopped producing CFC-based beclomethasone MDI from 2005.

Table 3. MDI manufacturing plants that started production only in 2006

No.	Company name	Product	Active ingredient	CFC2006 (kg)	CFC 2007 (kg)
2	Beijing Haiderun Pharmaceutical[4]	B15	Salbutamol	6,424.0	214.0
2	Beijing Haiderun Pharmaceutical	B22	Isoprenaline hydrochloride	2,915.0	-
2	Beijing Haiderun Pharmaceutical	B23	Iprartropium bromide	27.0	325.0
14	Henan Xinxin Pharmaceutical[5]	B11	Huashanshen	300.0	-
38	Jiangsu Tianji Pharmaceutical	B12	Ribavirin spray	4,202.0	-
Total				**13,868.0**	**539.0**

(e) In 5 manufacturing plants, several MDIs were produced for the first time in 2007, or restarted production in 2007 after several years without, as shown in Table 4 below. Some of the plants were already producing other MDIs in China:

Table 4. MDIs produced only in 2007 by established manufacturing plants

No.	Company name	Product	Active ingredient	CFC 2007 (kg)
11	Harbin Hengcang Pharmaceutical Co., Ltd.	B14	Sodium cromoglicate	127.0
22	Shandong Linuo Kefeng Pharmaceutical Co., Ltd.	B22	Isoprenaline hydrochloride	30.0
22	Shandong Linuo Kefeng Pharmaceutical Co., Ltd.	B04	Budesonide	70.0
31	Weifang Zhongshi Pharmaceutical Co.,Ltd.	B01	Beclometasone dipropionate	57.0
31	Weifang Zhongshi Pharmaceutical Co.,Ltd.	B16	Salbutamol (suspension)	70.7
32	No.1 Pharmaceutical Co., Ltd. of Wuxi Shanhe Group	B15	Salbutamol	3,200.0
35	Guandong Tongde Pharmaceutical Co., Ltd.	B15	Salbutamol	3,420.0
35	Guandong Tongde Pharmaceutical Co., Ltd.	B16	Salbutamol (suspension)	2,650.0
Total				**9,624.7**

UNIDO indicated that the funding level requested for the above-mentioned plants had taken into consideration their low levels of production.

(f) There are only 13 different active ingredients in MDIs that are currently produced in China, as shown in Table 5 below.[6] It should be noted that:

(i) The total production of MDIs with beclomethasone (B01), terbutaline sulphate (B13), sodium cromoglicate (B14), salbutamol - both in solution (B15) and suspension (B16), and isoprenaline (B22) represents more than 97 per cent of total production in 2007. These five active ingredients play a very important therapeutic role in the treatment of asthma and COPD;

[4] Due to environmental issues, in 1999 the plant was relocated to a new site; Trial production of CFC-MDIs started in the second half of 2005 with full production in 2006. CFCs consumption ranged between 3,567 kg and 4,459 kg between 1996 and 1998.

[5] The plant consumed 300 kg and 150 kg CFCs in 2001 and 2003 for the manufacturing of product B11.

[6] UNIDO indicated that 100,000 iprartropium MDIs (B23) were produced in 1997 with a total CFC consumption of 1,414 kg; huashanshen MDIs (B11) were produced in 2001 (32,000 MDIs) and 2003 (16,000 MDIs); the license for ketotifen fumarate MDI (B09) was approved in 1995, however there is no information on the production levels before 2004; salbutamol sulphate MDI (B25) is a newly approved application.

(ii) Total CFC consumption of seven different active ingredients in MDIs represents less than 3.0 per cent of total consumption (i.e., budesonide (B04), dimethicone (B05), ketotifun fumarate (B09), ribavirin (B12), salmeterol xinafoate (B17), iprartropium bromide (B23) and zhichuanling (B24)); and

(iii) MDIs containing ketotifen fumarate (B09), salmeterol xinafoate (B17) and iprartropium bromide (B23) commenced production only in 2006, with a total CFC consumption of 1,308.0 kg (this consumption increased to 1,606 kg in 2007).

Table 5. Active ingredients in MDIs currently manufactured in China

Product	Active ingredient	CFC consumption (kg)			% CFC*
		2005	2006	2007	
B17	Salmeterol xinafoate		10.0	10.0	0.00%
B05	Dimethicone	22.2	70.0	100.0	0.03%
B24	Zhichuanling	30.0	130.8	320.0	0.09%
B23	Iprartropium bromide	-	27.0	325.0	0.10%
B09	Ketotifun fumarate	-	1,271.0	1,271.0	0.37%
B12	Ribavirin	1,851.0	7,395.0	3,443.0	1.01%
B04	Budesonide	6,273.5	8,037.0	4,069.0	1.20%
B14	Sodium cromoglicate	6,902.0	7,541.5	13,591.0	3.99%
B13	Terbutaline sulfate	7,460.0	8,665.0	16,612.7	4.88%
B22	Isoprenaline hydrochloride	40,647.2	47,324.0	43,452.0	12.76%
B01	Beclometasone dipropionate	16,796.6	23,048.0	59,954.0	17.61%
B15	Salbutamol (solution)	69,905.3	91,650.0	85,378.0	25.07%
B16	Salbutamol (suspension)	93,793.1	85,396.2	111,968.7	32.88%
Total		**243,680.9**	**280,565.5**	**340,494.4**	**100.0%**

(*) Percentage of the total CFC consumption in 2007.

CFC requirements for MDI production post 2009

10. UNIDO has further discussed the issue of potential essential use exemptions for CFCs with the Government of China. When this issue was first raised by the Secretariat, UNIDO indicated that "the conversion of MDI production lines is planned to be partially completed by end of 2010 if the sector plan will be approved on 53rd ExCom. Due to the difficulties of conversion in this sector, some lines probably will not be possible to be converted by end of 2010. For the transitional period the stockpile which is currently being accumulated will be used. In order to protect the ozone layer, China is currently not planning to apply the essential use exemption". This situation has now changed. According to the revised MDI Sector Plan, CFC consumption will increase annually from 341 ODP tonnes in 2007 to a maximum level of 748.3 ODP tonnes in 2011 and then will decrease annually achieving the complete phase-out by 2014. The total cumulative CFC consumption between 2008 and 2014 amounts to 3,332.3 ODP tonnes. In explaining the reasons for the need for continued consumption up to 2014, UNIDO pointed to current patent situation and the reluctance of technology owners to provide technical assistance on affordable terms to China led the Government and UNIDO to believe that the phase-out schedule previously proposed was too ambitious and could not be implemented.

11. According to the CFC production closure agreement between the Government of China and the Executive Committee, a total of 1,100 ODP tonnes of CFCs could be produced in 2008 and 2009[7].

[7] Under the agreement between the Government of China and the Executive Committee for the CFCs/CTC/halon accelerated phase-out plan, China could export 100 ODP tonnes of CFCs in 2008 and 50 ODP tonnes in 2009.

To address the remaining CFC requirements of 2,232.3 ODP tonnes, the Government is proposing an amendment to the current production agreement.

12. According to the MDI Sector Plan, CFC consumption will experience unconstrained growth between 2007 and 2011. Only in 2012 will project implementation result in a reduction of some 100 ODP tonnes from the previous year's consumption. However, considering that reformulation to HFA-134a propellant for MDIs with beclamethasone and salbutamol as active ingredients is well know, it could be expected that conversion of at least these two MDIs, representing more than 75 per cent of total CFC consumption in China, could have been done at an earlier stage, assuming that the project is approved at the 55th Meeting. If this is the case, the amount of CFCs that might be needed from 2010 could be substantially reduced. UNIDO responded by indicating that issues such as the limited availability of technology providers and the increasing demand for MDIs could reduce the pace of the implementation of the project. However, UNIDO is planning to start the conversion of MDIs with those active ingredients first, with a possible completion date of 2011. However, further reduction of the need for CFCs after 2010 phase-out cannot be proposed at this stage, although it will be pursued during the implementation process.

Selection of alternative technologies

13. According to the MDI Sector Plan, all CFC-MDIs could be converted to HFA propellant. In the proposal, it is reported that "many issues still have to be resolved for introduction of hydrofluoroalkane as propellants for MDIs". When this issue was first raised, UNIDO indicated that "the main issue is related to patent rights. As mentioned in the proposal, the patents valid in China cover almost all the MDIs using HFA as propellant. Other manufacturing plants have not yet finalized their studies of the technologies to be selected to replace CFCs". UNIDO stated that since the MDI Sector Plan was first submitted, MDI manufacturing plants in China have realized the urgency of phasing out their CFC consumption. Accordingly, most of the enterprises started research on the issues associated with the phase-out of CFCs in this sector.

Technical assistance activities

14. The Secretariat pointed out that although the cost for preparation of technical dossiers for licenses not in production has been reduced from US $85,000 (requested in the proposal submitted to the 53rd Meeting) to US $20,000, the total funding request for non-investment type activities, amounting to US $11.735 million, is very high. This amount consists of:

(a) US $7.315 million for the preparation of technical dossiers for registration of 80 products: 33 that were in production in 2007 (at US $195,000/product), and 44[8] that were not produced in 2007 (at US $20,000/product);

(b) US $1.1 million for technical assistance such as workshops, training programmes, public awareness, consultants, study tours, legislative support activities, auditing CFC consumption for pharmaceutical aerosol manufacturers, development of a management information system and several other technical assistance activities;

(c) US $40,000 for each of the 18 production lines for validation of equipment, production process and other costs for a total of US $720,000; and

(d) US $2.6 million as a limited patent cost compensation. It is to be noted that this request was not included in the MDI Sector Plan submitted to the 53rd Meeting.

[8] Three of the 44 products will be abandoned in the near future.

Capital and operating costs

15. The MDI Sector Plan project is proposing funding for the conversion of 16 manufacturing plants with current production of CFC-MDIs. A similar replacement production line has been proposed for all manufacturing plants irrespective of the baseline production equipment and installed capacity at each manufacturing plant. Except for the largest manufacturing plant (plant No. 21), the funding being proposed would result in a capacity increase from current capacity levels. Specifically,

(a) There are seven plants with an annual CFC consumption of 0.55 ODP tonnes (plants No. 2, 9, 11, 16, 22, 25 and 37) and three additional plants with a consumption below 4.2 ODP tonnes (plants No. 8, 24, 32). Each one of these plants would receive US $50,000;

(b) Two plants with annual CFC consumption between 6.1 and 9.8 ODP tonnes (plants No. 35 and 36) would receive US $200,000 each;

(c) Two plants with consumption between 21.7 and 26.1 ODP tonnes (plants 19 and 28) and one additional plant with a consumption of 73.3 ODP tonnes (plan No. 18), would receive US$ 680,000, each; and

(d) One plant with an annual CFC consumption of 175.2 ODP tonnes (plant No. 21), would receive US $1,320,000.

16. The Secretariat also indicated that although incremental operating costs have been reduced from US $3,502,689 (US $12.47/kg) to US $1,989,502 (US $7.08/kg), they are still much higher than operating costs for the MDI projects that have already been approved for Bangladesh (US $4.06/kg), Egypt (US $5.64), Iran (US $3.59/kg) and Mexico (US $2.70/kg).

17. UNIDO indicated that even the MDI manufacturing plants with very low production output in the baseline year have a relatively large installed capacity (i.e., 5 to 8 million cans/year), which has not been fully utilized due to market reasons. However, minimal funding is being requested for those plants, as an incentive to close production and destroy the equipment. In order to decrease the total funding level, the operating costs were reduced from US $3.5 million to less than US $2 million. The price of valves used in calculating the operating costs has been estimated assuming that the price could be reduced in the future when the valves are locally produced and the production volume reaches a reasonable level.

Cost-effectiveness

18. As in the previous submission of the MDI Sector Plan, the Secretariat undertook a more detailed review of the proposal. For this purpose, the Secretariat developed a table associating each unitary cost proposed in the Plan to each of the 16 manufacturing plants currently in operation (Annex I attached). In this analysis, total requests for technical assistance (US $1,100,000) and for patents (US $2,600,000) were divided by the total amount of CFCs to be phased out and pro-rated among the 16 plants currently producing on the basis of their 2007 CFC consumption.

19. Based on this analysis, the Secretariat has the following additional observations:

(a) The overall cost-effectiveness (CE) of the project as submitted is US $58.46/kg, based on a CFC consumption of 322.475 ODP tonnes. The overall CE of the MDI Sector Plan is more than US $20.00/kg over the CE of already approved MDI projects for Bangladesh (US $38.08/kg); Iran (US $36.61/kg), Egypt (US $36.36/kg) and Mexico (US $37.75/kg);

(b) The Secretariat is aware that a CE threshold for projects in the MDI sub-sector has not been established by the Executive Committee. However, the Secretariat is correlating the calculated CE at the plant level with the potential sustainability of the manufacturing plants. On this basis, it is noted that:

(i) The most cost-effective enterprises are the two largest producer of MDIs in China (Plants No. 18 and 21), with a CE of US $32.93/kg and US $26.76/kg, respectively. The combined production of these two plants represents 74 per cent of the total MDIs produced in China and 77 per cent of total CFC consumption in the MDI sector in China;

(ii) Three manufacturing plants (plants No. 19, 28 and 35) have a CE value between US $67/kg and US $99/kg; six plants have a CE value between US $178/kg and US $788/kg (plants No. 2, 8, 11, 24, 32 and 36); three plants have a CE value between US $1,128/kg and US $1,619/kg (plants No. 9, 16 and 25); and two plants have a CE value between US $5,140/kg and US $5,145/kg (plants No. 22 and 37). Based on these values, the long term sustainability of these enterprises is in doubt;

(iii) US $880,000 associated with technical dossier for registration for MDI with a license but not producing in 2007 has not been distributed among the plants that are currently manufacturing MDIs in China.

UNIDO indicated that those MDI manufacturing plants with very high C/E (absolute value) will be encouraged to close their MDI activities through the approach proposed in the MDI Sector Plan.

Proposal by the Secretariat

20. *Based on the issues raised and observations made by the Secretariat in reviewing the MDI Sector Plan re-submitted by UNIDO, the request for funding of several project items where eligibility is in doubt, and on the basis of the experience that has been gained in the Multilateral Fund in the MDI sector, at the 55th Meeting the Secretariat proposed to UNIDO an alternative methodology for determining the incremental cost of the MDI Sector Plan for China. In reviewing the additional information provided by the Government of China on availability of non-CFC treatments in China, cut-off date for eligible enterprises and industrial rationalization (as contained in the project summary sector above), the Secretariat concluded that its proposal for determining the incremental cost of the MDI Sector Plan was still valid. This proposal, which is consistent with the current policies and guidelines of the Multilateral Fund, is presented below*.

Transition strategy

21. The MDI Sector Plan developed by the Government of China has identified several key elements that would allow for the transition from CFC to non-CFC alternatives in the MDI sector. These elements include the review and enforcement of policies and regulations governing the sector; consideration of the request for essential use exemptions beyond the 2010 phase-out date; policies related to CFC phase-out, the management of pharmaceutical grade CFC stocks if needed and the adaptation of the ODS licensing system to control CFC consumption in the MDI sector; further consideration of the development of a plan for the industrial rationalization; education campaigns for major stakeholders; and public awareness and information dissemination. Considering the number of manufacturing plants and the number of active ingredients in MDIs, the cost of the transition strategy would be US $300,000.

Product development

22. From the information included in the MDI Sector Plan and the limited information available in published literature on several of the active ingredients, it is not clear whether or not these ingredients are sold as pharmaceutical aerosols or MDIs in China. These active ingredients include ribavirin, dimethicone, ketotifen, isoprenaline, huashanshen and zhichuanling.

23. Of the 13 active ingredients in MDIs currently manufactured in China, four ingredients play a very important therapeutic role in the treatment of asthma and COPD. These ingredients are sodium cromoglicate, beclomethasone dipropionate, isoprenaline hydrochloride, and salbutamol in suspension and in solution. The total production of these MDIs represents more than 97 per cent of the total current CFC consumption in China (as shown in Table 5 above)

24. In order to determine the cost for the development of HFA MDIs, a total of US $2,400,000 is being proposed for sodium cromoglicate, beclomethasone dipropionate, isoprenaline hydrochloride (i.e., US $800,000 per active ingredient similarly to the levels approved for Egypt and Iran). An additional US $1,200,000 is being proposed for the development of salbutamol in both solution and suspension presentations. The terms of reference for the development of the HFA MDIs could be similar to those developed by UNIDO for the Egypt and Iran project proposals.

25. For addressing the remaining nine active ingredients (representing less than 3 per cent of the total CFC consumption for the production of MDIs), US $600,000 is being proposed as technical assistance calculated on the basis of the current CFC-12 price of US $3.43/kg and the current CFC consumption of 9,540 kg over a six-year period, when CFCs for MDI production will be completely phased out.

26. The total cost associated with the development of the HFA technology would be US $4,200,000.

Capital and operating costs

27. The Secretariat proposed the following level of funding for the conversion of 16 manufacturing plants with current production of CFC-MDIs:

(a) US $50,000 for each of the 12 production facilities with CFC consumption below 10 ODP tonnes. This cost is estimated on the basis of a new production line at about US $30,000 plus an additional US $20,000 for a small pressure tank required for the use of HFA propellant;

(b) US $400,000 for each of the three facilities with CFC consumption between 20 and 100 ODP tonnes. This cost is based on a recent quotation of a new complete production line that was included in the MDI project for Egypt;

(c) US $2,000,000 for the only plant with a CFC consumption of more than 100 ODP tonnes. This cost is based on costs of the production lines in the MDI projects for Egypt, Iran and Mexico;

(d) Therefore, the total capital cost associated with the conversion of eligible enterprises amounts to US $4,180,000 including a 10 per cent contingency.

28. The operating costs are calculated on the basis of a total CFC consumption of 322,475 kg and US $4.43/kg (representing the average value of operating costs approved for Bangladesh, Egypt and Iran). The resulting operating costs amount to US $1,430,000.

Project implementation and monitoring unit

29. In order to facilitate the transition from CFC to HFA propellant in the MDI sector in China, and taking into consideration the number of different active ingredients in MDIs produced by several plants geographically distributed throughout the country, the Secretariat proposed the establishment of a project implementation and monitoring unit at a total cost of US $2,380,000, that would be responsible for, among other things:

(a) Assisting in the preparation of 32 technical dossiers (at US $20,000 each) for the active ingredients currently being produced at the 16 manufacturing plants (the total cost for this activity is US $640,000);

(b) Validating the 16 manufacturing plants that are still producing (at US $30,000 per plant). The main activities include validation of workshops, of facility and equipment installation, of facility operation and performance, and products (the total cost for this activity is US $480,000);

(c) Training the relevant staff at the manufacturing plants. This training is in addition to the technical training that will be provided by the equipment supplier and included as part of the capital costs (the training cost is US $420,000 estimated at 10 per cent of the capital cost); and

(d) Monitoring, including the development of relevant management, monitoring and verification systems, as well as the management of stockpiles, if necessary. The cost of this activity is US $840,000 estimated at 20 per cent of the capital cost.

Funding summary

30. The total level of funding proposed for the complete phase-out of CFCs in the MDI sector in China is US $12,490,000 with the following distribution:

Transition strategy	US $300,000
Product development	US $4,200,000
Capital costs	US $4,180,000
Operating costs	US $1,430,000
Project implementation and monitoring unit	US $2,380,000

31. The Government of China will have flexibility in utilizing the funding available under the MDI Sector Plan for activities it deems adequate to achieve the complete phase-out of CFCs in the MDI sector and in accordance with relevant decisions and guidelines of the Multilateral Fund.

32. UNIDO responded to the above proposal that there are many manufacturing plants in China producing MDIs with several different active ingredients, while MDIs are manufactured in a very limited number of enterprises (one or two) in Article 5 countries with an approved phase-out project. For small and medium sized enterprises, each kind of product and license is a major asset of the enterprise. These issues and the specific situation of China have been taken into consideration in the preparation of the MDI Sector Plan. Therefore, assessing the project on its CE value would be misleading.

33. Furthermore, UNIDO indicated that the revised MDI Sector Plan has demonstrated the actual cost of the activities required to phase out CFC consumption in the MDI sector. These costs have been based on a correct calculation methodology. Taking into consideration the Secretariat’s proposal, the capital costs associated with plants that are manufacturing both MDI and non-MDI pharmaceutical aerosols have been reduced. The revised project proposed by UNIDO is presented in Table 6 below:

Table 6. Total revised cost of the MDI Sector Plan proposed by UNIDO

Cost item	Total cost (US $)		
	55th ExCom	53rd ExCom	Difference
Technical assistance	1,100,000	1,100,000	-
Patent cost	2,600,000		(2,600,000)
Dossier for licenses in production in 2007	6,435,000	7,020,000	585,000
Dossier for licenses not in production in 2007	880,000	3,485,000	2,605,000
Plant modifications of existing facilities	4,204,000	5,560,000	1,356,000
Production validation (per production line)	640,000	680,000	40,000
Training programme (per production line)	440,000	412,500	(27,500)
Operating cost	1,989,502	3,502,689	1,513,187
Contingency	420,400	556,000	135,600
Total	**18,708,902**	**22,316,189**	**3,607,287**

34. The Secretariat notes that the revised project cost is US $3,607,287 less than as first submitted to the 53rd Meeting of the Executive Committee. The Secretariat further noted that, on the basis of decision 41/80, the MDI Sector Plan for China should not have been submitted for consideration by the Executive Committee since no agreement has been reached with UNIDO on the level of funding. However, being aware that this is the last CFC phase-out plan for China, the complexity of the proposal, its major implications for potential requests for essential uses post 2010, and the additional assistance required by the Government of China to reduce its CFC consumption in order to achieve the complete phase-out of CFCs by 1 January 2010, the Secretariat is submitting the project for consideration by the Executive Committee.

RECOMMENDATION

35. The Executive Committee may wish to consider the MDI Sector Plan in light of the above comments and observations.

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

China

(I) PROJECT TITLE	AGENCY
Foam	IBRD

(II) LATEST ARTICLE 7 DATA (ODP Tonnes)			Year: 2007	
CFC: 5832.1	CTC: 265.1	Halons: 594.4	MB: 405	TCA: 251.1

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP Tonnes)						Year: 2007							
Substances	Aerosol	Foam	Halon	Refrigeration		Solvent	Process Agent	MDI	Lab Use	Methyl Bromide		Tobacco fluffing	Total Sector Consumption
				Manufacturing	Servicing					QPS	Non QPS		
CFC	440.	237.4			2,854.2			340.5					3,872.1
CTC									265.1				265.1
Halons			788.3										788.3
Methyl Bromide										1,059.5	313.5		1,373.1
TCA						251.1							251.1

(IV) PROJECT DATA			2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Montreal Protocol Consumption Limits		CFC		57,818.7	57,818.7	57,818.7	28,909.4	28,909.4	8,672.8	8,672.8		
Maximum Allowable Consumption (ODP Tonnes)		CFC		14,143	13,830.	10,500	9,000.	7,000.	400.	0.	0.	
Project Costs (US$)	IBRD	Project Costs		9,940,000	12,570,000	10,903,000	10,903,000	3,320,000	2,676,000	1,767,000	1,767,000	53,846,000
		Support Costs		886,600	1,115,300.	961,270	961,270	282,800.	240,840	159,030	159,030	4,766,140
Total Funds Approved in Principle (US$)		Project Costs	0.	9,940,000	12,570,000	10,903,000	10,903,000	3,320,000	2,676,000	1,767,000	1,767,000	53,846,000
		Support Costs	0.	886,600	1,115,300.	961,270	961,270	282,800.	240,840	159,030	159,030	4,766,140
Total Funds Released by the ExCom (US$)		Project Costs	9,940,000	12,570,000	10,903,000	10,903,000	3,320,000	0.	4,443,000	0.	0.	52,079,000
		Support Costs	886,600	1,115,300	961,270.	961,270	282,800	0.	399,870	0.	0.	4,607,110
Total Funds Requested for Current Year (US$)		Project Costs								1,767,000		1,767,000
		Support Costs								159,030		159,030

(V) SECRETARIAT'S RECOMMENDATION:	For blanket approval

SECTOR PLAN FOR SECTOR PLAN FOR PHASE-OUT OF CFC-11 IN THE CHINA FOAM SECTOR: 2009 ANNUAL PROGRAMME

PROJECT DESCRIPTION

36. On behalf of the Government of the People's Republic of China (China), the World Bank has submitted to the 56th Meeting of the Executive Committee a request for the release of the eighth funding tranche, namely, US $1,767,000 plus agency support costs of US $159,030, to finance the 2009 annual implementation programme (AIP) for the CFC-11 phase-out in the polyurethane (PU) foam sector in China. The request was accompanied by a report on the 2007 work programme and achievements made in 2008 to date, a verification report for 2007, and the proposed annual work programme for 2009.

Background

37. The CFC-11 phase-out in the polyurethane foam sector in China was approved at the 35th Meeting of the Executive Committee, with the World Bank as the implementing agency and the State Environmental Protection Agency (SEPA) as the national implementing operating agency; in the meantime, SEPA has become the Ministry for Environmental Protection (MEP). The implementation of the CFC-11 phase-out in the polyurethane foam sector supports the Government of China in meeting its Montreal Protocol obligations, including the complete phase-out of the controlled use of CFCs by 2010. In order to achieve these targets, a series of investment, non-investment, technical assistance and capacity building activities are being implemented by China with the assistance of the World Bank. The total funds approved in principle for the plan amounted to US $53,846,000 plus agency support costs of US $4,766,140.

38. The original "Agreement for the China CFC 11 PU Foam Sector" between China and the Executive Committee was approved at the 35th Meeting of the Executive Committee. Subsequently, at the 44th Meeting, both parties entered into another broader agreement, namely the agreement for the CFC/CTC/Halon Accelerated Phase-out Plan (APP), which partially supersedes the agreement of the 35th Meeting. Among other objectives, the APP foresees a phase-out of CFC-11 production at the end of June 2007, a target that has been achieved.

Verification of consumption

39. Under the PU foam sector plan, the maximum allowable consumption of CFC-11 amounts to 3,821 ODP tonnes for 2007, while under the APP the consumption limit is only 400 ODP tonnes. The latter target therefore became binding for China under both the PU foam sector plan and the APP.

40. The consumption in the PU foam sector is verified by using the overall CFC-11 consumption of China as a starting point, and deducting from it the verified consumption in other sectors using CFC-11. The results are shown in the table below:

CFC-11 Production and Consumption	CFC-11 (in ODP)
CFC-11 2007 production as verified under the CFC production Sector	959.85
CFC-11 export as reported by MEP and verified by the Bank	58.50
National CFC-11 Consumption	901.35
MDI	46
Refrigeration servicing sector (chillers)	30
Aerosol	88
National stockpile	500
CFC-11 for consumption in the PU foam sector:	237.35

41. The verified level of sector consumption is 162.68 ODP tonnes below the maximum allowable consumption, i.e. only 59.3 per cent of the maximum allowable consumption under the APP agreement were utilised.

Report on the 2007 annual work plan and preliminary report on the 2008 annual work plan

Policy and government actions

42. In order to meet the target of the Agreement on Accelerated Phase-out (APP agreement), China stopped CFC production as of 1 July 2007. Bans on the use of CFC-11 in all consumption sectors, such as tobacco, refrigeration, and foam have been in operation since July 2007 and January 2008; the latter date being relevant for the foam sector. The control on CFC production, import/export and of the consumption in other sectors enable the foam sector to limit its national CFC-11 consumption and maintain it within the agreed targets. Studies and research are being undertaken to promote the use of new and existing blowing agents (e.g. water, hydrocarbon, CO2, HFC 245fa) and variable pressure foaming (VPF) technology in foam production.

Enterprise and provincial phase-out activities

43. Seven individual contracts accounting for 195.581 tonnes of CFC-11 phase-out were signed in 2007 with a total grant of US$ 554,320. With surpluses of 2.57 tonnes in the 2004 AP, 142.22 tonnes in the 2005 AP, and 300 tonnes in the 2006 AP, the 2007 phase-out target of 551 tonnes has been met. To date, there are 108 individual projects, 11 industrial consolidation projects and 4 provincial projects under implementation. No new phase-out contracts are to be signed in 2008.

Technical Assistance Activities

44. The technical assistance activities envisaged under the Sector Plan concentrate on strengthening the overall institutional framework for phase-out including: development of substitute chemicals; management, monitoring & evaluation capabilities of participating institutions; enhancing skills of enterprise managers involved in CFC-11 consumption phase-out activities; and information exchange. Five activities were planned for 2007. Of these, the Performance Audit by the China National Audit Office has been completed, while the remaining four, including standards revision, identification of foam enterprises and training, are under implementation. The 2008 activities completed so far include an Annual Programme audit, a “Survey on blowing agents used in the foam sector in China”, “consultant services” and “Monitoring of CFC-11 phase-out”.

Verification of activities

45. The World Bank carries out annual verification of CFC-11 consumption in a sample of enterprises and provinces with phase-out agreements under the sector plan. In May 2008, the Bank visited 5 individual projects (with 300 ODP tonnes) of the 24 individual projects, which constitutes 40 per cent of the 746.15 ODP phase-out and 21 per cent of the total 24 conversion contracts under the 2007 annual program. In addition, the Bank also verified CFC-11 sales in 2007 from three CFC producers to four provinces which have signed provincial contracts with SEPA/MEP.

Annual work programme for 2009

46. In 2009, the following government actions are planned: continued support to the development of substitutes and research for non-CFC chemicals for foam production; continued efforts to improve knowledge and capabilities of project management personnel and others involved in the phase-out

programme; and continued implementation of existing local ODS phase-out policies. In addition, a new ODS regulation has been formulated, and existing national policies are being enforced.

47. Implementation will continue of ongoing projects for enterprise and provincial activities, including procurement of equipment, training, and monitoring and reporting. No new phase-out contracts will be entered into during 2009. Planned activities in the area of technical assistance include implementation workshops in support of the 108 individual phase-out contracts; monitoring of CFC phase-out in the foam sector; consultant services for monitoring, research and surveys; a performance audit for 2008; and the preparation of a project completion report, given that 2009 will be the last year of implementation of the sector plan.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

48. The original submission informed of the intention to use some funds which had so far not been allocated for CFC-11 phase-out activities for the purpose of HCFC phase-out activities in the years until 2015. The Secretariat advised on the framework of flexibility allowed under the agreement and pointed out that the agreement was approved for "the phased reduction and complete phase-out in the consumption of CFC-11 used in the polyurethane foam sector in China" and that "the funds may be used in the manner that China believes will achieve the smoothest possible CFC polyurethane foam sector phase-out"; consequently, a change in the agreement appears to be necessary to cover HCFC activities. The Secretariat also advised that, in case of a prolongation of the agreement until 2015, the potential continuation and type of reporting would need to be discussed. Subsequently, the World Bank informed the Secretariat that China has decided to allocate all available funds to the phase-out of CFC-11, and that it is expected to complete these activities during 2009.

49. The annual plan included the information that a "new "ODS management regulation has been approved by MEP and submitted to the Legal Department of State Council for review and approval in 2007". The Secretariat requested information about the status of that legislation. The World Bank informed that the ODS regulation is currently under review by the State Council and that MEP assumes that it will be approved in 2009.

50. The contracts with four producers for stockpiling their product were provided to the Secretariat as part of the submission on the refrigeration service sector plan by UNIDO. These showed the provisions made with four different manufacturers under four different contracts. These contracts, all being signed in September 2007, specify that the stockpiled CFCs cannot be released without endorsement of SEPA/MEP. The Secretariat requested some further clarifications on the use of the national stockpile. MEP informed the Secretariat that it has established a permit system, in which sales of CFC from the stockpile held by the producers to the distributors and from the distributors to the users requires consent by MEP, and such sales are only allowed for refrigeration servicing and pharmaceutical uses.

51. The implementation of the 2007 and 2008 annual plans has proceeded well. The Secretariat notes that the foam plan in general has moved during the last years to focus more on administrative means than phase-out. The underlying logic of this shift is fully acceptable, and is consistent with the agreement. It is mentioned here only because it is a unique characteristic among the activities of Article 5 countries in the foam sector. China transferred more responsibility and activities to decentralised entities which, is likely to positively contribute to their sustainability. The proposed implementation of the 2009 annual plan continues this shift, and will largely or completely utilize the available resources under the overall plan pending the timely completion of activities and potential differences between planned and actual expenditures in the years 2008 and 2009.

RECOMMENDATION

52. The Fund Secretariat recommends blanket approval of the 2009 tranche of the Plan for CFC phase-out in the polyurethane foam Sector in China with associated support costs at the funding level shown in the table below:

	Project Title	Project Funding (US$)	Support Cost (US$)	Implementing Agency
(a)	Sector plan for phase-out of CFC-11 in the China foam sector: 2009 annual programme	1,767,000	159,030	World Bank

SECTOR PLAN FOR HALON PHASE-OUT: 2009 ANNUAL PROGRAMME

PROJECT DESCRIPTION

Background

53. The China Halon Sector Plan was approved at the 23rd Meeting of the Executive Committee in November 1997 through decision 23/11. This is the first sector phase-out plan and it addresses both halon consumption and production. US $61.9 million has been approved to date of the US $62 million approved for the overall plan. The 2009 annual work plan is the last tranche of this multi-year agreement.

54. In accordance with the Executive Committee's approval of the Sector Plan for Halon Phase-out (decision 23/11) and the CFC/CTC/Halon Accelerated Phase-out Plan in China (decision 44/59), China is requesting, through the World Bank, the release of the twelfth tranche of US $100,000 for the implementation of the 2009 annual programme, and US $7,500 in support costs (at a rate of 7.5 per cent). The 2009 annual programme includes the following elements:

(a) US $70,000 to be used for training of the performance auditors and the conduct of the audits;

(b) US $30,000 to be used for training workshops for local environmental protection bureaus, local fire fighting bureaus and halon enterprises. .

55. During 2009, China will continue to implement ongoing activities funded from previous tranches including:

(a) Final closure of halon 1301 production for controlled consumption;

(b) Contract signing for the final halon 1301 system manufacturers;

(c) Technical assistance activities, training and awareness activities;

(d) Performance monitoring;

(e) Central and provincial halon banking and management; and

(f) Halon management, supervision, monitoring and controlling feedstock uses, preventing illegal production and export.

56. China will also continue to implement the following policies including:

(a) The production quota license system to ensure that controlled halon 1301 production will be below the agreed ceiling of 1,000 ODP tonnes for 2009;

(b) The ban of installation of new halon extinguishers for non-essential uses and a gradual tightening of the definition of essential uses;

(c) Halon 1301 production for use as a feedstock for pesticide and pharmaceutical intermediate production can only be used by nine enterprises which are required to report on the amounts of halon 1301 stockpiles, procurement and consumption on a quarterly basis.

57. China also plans to issue policies needed for halon recycling, refilling and reuse and to establish a certificate system, including certificate and labelling of recycled halon, certificate on qualification of

recycling centre and maintenance and refilling station. A new ODS management regulation incorporating these policies is expected to be approved by the State Council in 2009. The regulation will also manage the sale and consumption of halon 1301 as a feedstock.

58. The World Bank indicated that additional activities might be added and funded through the unallocated balance from the previous annual programmes.

59. There are neither any remaining halon 1211 production facilities nor consumption in China, as defined by the Montreal Protocol. Of the 76 halon fire extinguisher manufacturers and the 22 halon 1301 system manufacturers, 61 extinguisher and 14 system manufacturers were funded under the sector plan and either closed or converted their manufacturing of halon fire extinguishing systems from halon to non-ODS systems. Those system manufacturers that did not sign contracts in 2008 will sign phase-out contracts in 2009. An additional 15 fire extinguisher manufacturers and 8 halon system manufacturers were closed or converted without funding.

60. Actual halon 1301 production was within the 1,000 ODP tonnes total, allowable with production recorded in 2007 as 988 ODP tonnes. Halon 1301 consumption was 788 ODP tonnes (78.8 metric tonnes) which is lower than the planned level of 1,000 ODP tonnes. Only one halon 1301 producer in China continues to retain its production facility and capacity, but its production for controlled uses will end by 1 January 2010. Several halon technical assistance programmes are still under implementation from initial approvals dating back to 2002.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

61. As requested in decision 50/29(c), the World Bank provided the following table to outline how funds would be used that had been approved for the halon phase-out project but that had not been allocated or disbursed. The value of these funds amounted to US $12.2 million.

Table 1

INDICATIVE BUDGET 2008-2015

Period	Activity	Tentative Allocation (US $)	Comments
2008	CO_2 fire extinguisher penalty	1,200,000	To be managed under the halon account.
2008-2009	Halon-1301 system manufacture conversion	339,840	Remaining manufacturers as per SP and surveys
2009	Closure of the halon-1301 production for controlled consumption	520,000	Closure of Halon-1301 production for consumption
2008-2010	TA activities, training and awareness activities	900,000	
2009-2010	Halon sector closure activities, PCR, audits, Bank reporting and verifications etc.	300,000	
2008-2015	Central and provincial halon banking and management activities	7,405,800	Activities to be supported in 31 provinces and larger cities and municipalities
2010-2015	Halon management, supervision	1,500,000	

Period	Activity	Tentative Allocation (US $)	Comments
	activities, monitoring and controlling feedstock uses of halons and preventing illegal halon production and export and other activities as needed		
Total		**12,165,640**	

62. The World Bank indicated that the budget was tentative and, as the funding from the Executive Committee is based on agreed performance targets which have all so far been met, China reserves the right to adjust the budget as needed. The Bank provided information with an indicative budget as included in the following table.

63. As indicated in the above table, China intends to use resources approved by the plan for post-2010 implementation. At its 53rd Meeting, the Executive Committee decided to request the Government of China and the World Bank to continue to report on the use of the remaining unused funds until 2010 and to report back to the Executive Committee by the last Meeting of 2008 on a feasible reporting system for the years beyond 2010 (decision 53/25, paragraph b). As of this writing, the Bank has not submitted a plan for a feasible reporting system for the years beyond 2010.

64. In the context of the review at the 53rd Meeting, the Bank advised that its legal department was reviewing the issue of post-2010 implementation for the halon sector plan. The Bank was asked to indicate if it could extend an agreement beyond its closing date of 2010.

65. Exports amounting to 200 ODP tonnes of halon 1301 were reported despite the fact that the Bank indicated that "the export quota would not be distributed from 2006". The proposal indicated that the 20 metric tonnes that were exported were included in the calculation of domestic consumption, instead of being deducted. The Bank was asked to clarify.

66. The Auditors indicated that it was not possible to track the entire consumption of halon 1301 in 2007 to production ledgers. In this respect, the auditors recommended that the World Bank and China:

(a) Prepare a more detailed mapping of the pesticide sector in China in order to be able to track the halon 1301 used for feedstock or reselling of halon 1301 for feedstock to or from other companies; and

(b) Improve the documentation on the usage of halon 1301 in the pesticide sector by, for example, requiring that production ledgers in the pesticide sector should be improved and should be kept for a specified number of years and provided to external auditors.

67. The Bank was asked to comment on these recommendations.

68. As of this writing, the Fund Secretariat has not received a response to its questions to the World Bank sent on 23 September 2008.

RECOMMENDATIONS

69. Pending.

PHASE-OUT THE PRODUCTION AND CONSUMPTION OF CTC FOR PROCESS AGENT AND OTHER NON-IDENTIFIED USES (PHASE I): 2009 ANNUAL PROGRAMME

Introduction

70. The World Bank is submitting to the 56th Meeting of the Executive Committee, on behalf of the Government of China, the 2009 annual programme of the sector plan for phasing out the production and consumption of CTC and the consumption of CFC-113 for process agent (25) applications under phase I. This is with the understanding that the request for the release of funding amounting to US $1 million plus the associated support cost of US $75,000 will be submitted to the 57th Meeting together with the verification of the implementation of the 2008 annual work programme. The 2009 work programme is not attached but could be made available upon request.

Background

71. At its 38th Meeting in November 2002, the Executive Committee approved, in principle, US $65 million for the Agreement with the People's Republic of China to phase-out the production and consumption of CTC, and the consumption of CFC-113 as a process agent (phase I), and disbursed the first tranche of US $2 million at the meeting to start implementation. China has committed to complying with the Montreal Protocol phase-out schedule for the controlled CTC production and consumption (25 applications) and the consumption of CFC-113 as a process agent by implementing the Agreement. Subsequently the Executive Committee approved the 2003 to 2008 annual work programmes at a total funding level of US $64 million. The production of CTC for controlled use and as feedstock for CFC production was reduced from 64,152 ODP tonnes in 2001 when the phase-out plan was developed to 13,438.1 ODP tonnes in 2007. The consumption of CTC as a process agent for the 25 applications under phase I came down from 5,049 ODP tonnes in 2002 to 481.75 ODP tonnes in 2007 and CFC-113 consumption was reduced from 17.2 ODP tonnes in 2002 to zero in 2006.

72. The reduction targets and the associated funding levels for 2008 and 2009 are set out in the table below.

Table 1

TARGETS AND FUNDING OF THE 2008 AND 2009 ANNUAL PROGRAMMES

Consumption	
CTC for 25 process agent application	
2008	493 ODP tonnes
2009	493 ODP tonnes
Impact	0
CFC-113 for process agent application	
2008	0
2009	0
Impact	0
Production	
CTC	
2008	*8,188 ODP tonnes
2009	**8,188 ODP tonnes
Impact	0
Total MLF funding approved in principle	US $65 million
Total funding released by the MLF by December 2008	US $64 million
Level of funding requested	US $1 million

*The 2008 target for CTC maximum allowable production and imports for CTC use as process agent and feedstock for CFC production as a result of the approval of phase II of the CTC sector plan.
**This is the target for both phase I and phase II, which includes 7,341 ODP tonnes which is 15 per cent of the baseline plus 10 per cent for BDN and 847 ODP tonnes as feedstock for 550 ODP tonnes of CFC production for MDIs in 2009.

Project Description

73. The submission of the World Bank starts with Part A which contains a summary of the results from the implementation of the five annual work programmes from 2003 to 2007, as well as a progress report on the implementation of the 2008 annual programme as of June 2008. The status of implementation of the programme is summarised in the following tables, one on production and the other on consumption.

Table 2

SUMMARY OF IMPLEMENTATION ON CTC PRODUCTION PHASE-OUT (PHASE I) BY JUNE 2008

Year	Number of CTC producers	CTC producers closed in the year	Remaining number of CTC producers	CTC producers with production quotas
2003	16	0	16	14
2004	17 (1 new added)	5	12	9
2005	12	1	11	8
2006	12 (1 new added)	2	10	6
2007	13 (3 new added)	1	12	[0]
2008	14 (2 new added)	0	14 (1 stopped production and will be dismantled in 2008)	[0]

Table 3

STATUS OF PHASE I ENTERPRISES ODS PHASE-OUT ACTIVITIES UP TO 30 JUNE 2008

PA Applications	Original number of PA enterprise	Remaining enterprise using CTC/CFC-113	Converted to non-ODS	ODS PA production closed
CR	8 (including one newly identified)	2	0	6
CP-70	12	0	1	11
CSM	3	1 (emission control)	0	2
Ketotifen	1	0	1	0
Endosulphan	2 (newly identified)	0	0	2
PTFE	6	0	6	0
Total	32	3	8	21

74. The Government of China has continued to implement a number of policies to assist the implementation of the CTC sector plan. The "Circular on Implementing Carbon Tetrachloride (CTC) Production Quota-License System" placed all CTC producers including the newly erected chloromethane plants under control. The "Circular on CTC Consumption Quota-License System", issued in May 2003, required CTC dealers and consuming enterprises to register and apply for permits both for selling and buying the controlled substance and submit quarterly reports to the Ministry of Environment Protection (MEP). In 2004 the Government issued the "Circular on Management Procedures for Site Supervision of CTC Production Enterprises", which introduced the same peer monitoring system used in the CFC production phase-out plan. The supervision included the newly established chloromethane producers.

75. In 2008 two new chloromethane plants were established and one existing one will be closed due to poor operating efficiency. The new plants were approved with the condition of having a fully operational CTC conversion facility to treat the unintended CTC produced. Table I-1 in Annex I of the submission provides a list of all the CTC plants, with data on name, type of CTC facility (co-production or dedicated), capacity in 2001 and capacity in 2008, number of lines, production between 2001-2008 and status of plant (closed or operating).

76. In 2006, the MEP issued a supplementary Circular on Strict Control of New Establishment and Expansion of Project Using CTC as process agents. For plants that use CTC as feedstock, the circular requires an application for consumption quota to be obtained from MEP.

77. As can be seen in Table 3 above, there are only 2 chlorinated rubber (CR) producers and one chlorosulphonated polyofin (CSM) producer that still consumes CTC, while the other enterprises covered under Phase I have been closed or converted to non-ODS technologies. The two CR producers have signed contracts with MEP for closure in 2009. Since 2006, consumption of CFC-113 as a process agent has been terminated.

78. The CSM project in Jilin Province, the only emission control project under phase I, continues to struggle with the imported technology. Modifications have been made without much improvement. Meanwhile, the enterprise entrusted several universities or research institutes to seek substitute technologies to replace CTC consumption. If all efforts fail, the plant will have to cut its CSM operation to meet the CTC consumption target for 2010 set by the Agreement.

79. Tables II-1 to II-5 in Annex II of the submission provide the details of the activities on an enterprise level for each of the applications, with information on the number of the application, name of the enterprise, name of the product, capacity, CTC/CFC-113 consumption and level of production between 2001-2004, an update for 2005-2008, and the status of the plant. Annex V of the submission provides a list of the contracts that have been signed between MEP and the enterprises, with specifics such as the name of the enterprise, the baseline, nature of the contract, year of contract and status of the plant (producing or closed).

80. Under the technical assistance programme, out of a total of 32 activities planned since 2003, 24 have been completed and 8 are still under implementation. Details by annual programme are provided in tables 1-6 in Annex VI of the submission. Among those planned for 2008 are three which are worth mentioning here: verification of new feedstock use, new process agents and CTC dealers; verification of CTC use in laboratories, and the implementation of CTC production on-line monitoring that will enable MEP to collect instant data on the CTC production from the CTC plants.

81. Part B of the submission contains the proposed 2009 annual programme and covers the planned targets and the activities proposed to be undertaken to achieve these targets. The targets have been adjusted to reflect the impact of the accelerated phase-out plan (APP) and phase II of the sector plan. CTC production for controlled uses for both phase I and phase II of the sector plan and for feedstock use in CFC production should not exceed 8,188 ODP tonnes (7,341 + 847), and the consumption of CTC as

process agents under phase I should not exceed 493 ODP tonnes in 2009. The consumption of CFC-113 as a process agent would be zero, as stipulated in the Agreement under Phase I.

82. The new "ODS management regulation" has been under development since 2004 and would serve as a solid legal basis for sustainable ODS phase-out. The submission anticipates its approval by the State Council in 2009.

83. Of the technical assistance activities planned for 2009, a study on risk assessment of long-term CTC management is planned to examine the market potentials and therefore the economic viability of the products that use CTC as feedstock and the implications on the sustained compliance with the control of CTC in China.

84. For management of CTC production and consumption beyond 2010, the submission anticipates relying on the existing policy framework to reduce the CTC production to 4,471 ODP tonnes which is 15% of the baseline for meeting basic domestic needs and consumption to 1,214 ODP tonnes which is permitted under Phase I (220 ODP tonnes) and Phase II (994 ODP tonnes). For the allowed 220 ODP tonnes after 2010 under Phase I, the submission anticipates to reserve it for the CSM project while closing down the remaining two CR projects. For the CTC consumption for laboratory uses, MEP plans to seek exemption through the essential uses exemption procedure under the Montreal Protocol.

85. MEP intends to continue to carry out monitoring and verification of the CTC producers and consumers to ensure the sustained results from the sector plan. MEP will continue submitting reports to the Executive Committee on the results of such monitoring and verification after 2010. To finance these activities after 2010, MEP proposes to use the US$1.3 million which could remain un-obligated after 2010.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

86. The 2008 annual programme is proceeding as planned and the only problem remains to be the Jilin CSM emission control project which continues experiencing difficulty in absorbing the technology imported. However there seems to be a plan to control the CTC consumption by cutting back on CSM production if all current efforts to change the situation fail.

87. The proposed 2009 annual work programme provides clear targets which are consistent with those in the Agreement and a plan of action which intends to continue the momentum and the implementation structure that has been built in the past six years. However this will be the last year of the sector plan and the completion of CTC phase out under Phase I and the sustainability of the results will depend on a number of factors. First of all, the trial efforts to make the imported technology work at Jilin CSM emission projects have to be successful or a decision has to be made to ensure that the plant cut back on CSM production to reduce CTC consumption in order to maintain the CTC consumption level allowed under Phase I after 2010.

88. There have been new chloromethane plants built in the past few years including two new ones in 2008, with new capacity created for producing unintended CTC. Although MEP has a policy to demand the new plants to build a CTC disposal facility, most of these plants have chosen to convert the CTC into non-ODS products. However some of these products may not have good market potential, either due to other competitive products or high cost of production and could fail. The Shanghai Chlor-Alkali CTC/PCE project is a case in point, where the effort to convert CTC completely to PCE could not be sustained due to the higher cost of production of PCE as compared to another technology route and as a result the plant has to be dismantled. Situations like this could have implications on the sustained

compliance of China with CTC production controls. In this context, the study on the risk assessment of the non-ODS products using CTC as a feedstock is a project planned in good time under the technical assistance programme for 2009.

89. The plan of MEP for sustaining the CTC phase out beyond 2010 is a good attempt in view of the unintended CTC production from chloromethane production and the dual usage of CTC both for controlled use and feedstock applications. The proposal to use the un-obligated US$1.3 million from the sector plan after 2010 could be a good use of the remaining resources in view of the risk of non-compliance.

RECOMMENDATION

90. The Secretariat recommends that the Executive Committee

(a) Takes note of the proposed 2009 work programme of the China sector plan for phasing out the production and consumption of CTC and the consumption of CFC-113 as a process agent (25 applications) under Phase I;

(b) Takes note of the proposed plan to sustain the results from implementing the CTC phase-out sector plan for both Phase I and Phase II beyond 2010 and the proposal to allocate the estimated un-spend fund balance of US$ 1.3 million;

(c) Approves the 2009 annual programme at US $1.0 million and associated support cost at US $75,000 for Phase I of the sector plan, noting that the request for funding and support costs will be submitted by the World Bank to the 57th Meeting together with a verification report on the implementation of the 2008 annual programme.

PHASE-OUT THE PRODUCTION AND CONSUMPTION OF CTC FOR PROCESS AGENT AND OTHER NON-IDENTIFIED USES (PHASE II): 2009 ANNUAL PROGRAMME

Introduction

91. The World Bank is submitting to the 56th Meeting of the Executive Committee, on behalf of the Government of China, the 2009 annual programme of the sector plan for phasing out the production and consumption of CTC for process agent and other non-identified uses (Phase II). This is with the understanding that the request for the release of the fourth tranche of funding amounting to US $1.5 million plus the associated support cost of US $112,500 will be submitted to the 58th Meeting together with the verification of the implementation of the 2008 annual work programme. The proposed 2009 annual work programme is not attached but could be made available upon request.

Background

92. At its 47th Meeting in 2005, the Executive Committee approved, in principle, the sector plan for phasing out the production and consumption of CTC for process agent and other non-identified uses in China (Phase II) at a total level of funding of US $46.5 million plus support costs of US $3,487,500 for the World Bank. The Committee approved the Agreement for Phase II of the sector plan at the 48th Meeting. The Committee has disbursed a total of US $45 million to implement the 2006, 2007 and 2008 annual work programmes. The CTC reduction targets and fund disbursement schedule under the agreement are reproduced below.

Table 1

Allowable CTC Production and Consumption in PA II and Agreed funding

	Baseline (2003)	2006	2007	2008	2009	2010
1. Max allowed CTC production for consumption under the MP	29,367	7,341*	7,341	7,341	7,341	4,471
2. Max allowable CTC consumption as per the Montreal Protocol control measures	55,891	8,383	8,383	8,383	8,383	0
3. Max allowable CTC consumption for Phase I	5,049	493	493	493	493	220
4. Max allowable CTC consumption for Phase II	5,411	6,945**	6,945	6,945	6,945	994[1]
5. Non identified CTC consumption	3,300	945	945	945	945	-
6. Max allowable amount of CTC used in process agent applications listed in the interim table A-bis of decision XVII/8 and in potential future process agent applications as identified and reported by China in its annual verification reports***	NA	14,300	14,300	6,600	6,600	0****
Multilateral Fund funding (in US $ thousands)						**TOTAL**
7. MLF Funding for Phase II		25,000	10,000	10,000	1,500	46,500
8. Agency support costs for Phase II		1,875	750	750	112.5	3,487.5

Notes: 1. provided emissions are accepted by the Parties as eligible, under decision X/14

* The allowed CTC production for consumption includes the additional production of 10 per cent of base level allowed for basic domestic need from 2005 to 2009 and 15 per cent from 2010

** The Bank will verify consumption by companies and applications covered by the PA II Sector Plan (Row 4). The annual verification will cover a random selection of at least 30 per cent of all enterprises covering at least 30% of the PA II consumption,

*** These figures are amended by Decision 53/32 at the 53rd Executive Committee Meeting. The CTC use figures for the years 2007, 2008 and 2009 have been fixed 6,600 ODP tonnes to replace the initial figure of 14,300 ODP tonnes. China will verify the annual amount of the CTC amounts used in those applications consistent with the procedures established for CTC feedstock uses and endorsed by Executive Committee at its 48th Meeting.

**** The amount of CTC used will be reduced to zero, or any insignificant levels of emissions which might be approved by the Parties, by 1 January 2010.

Project description

93. The submission of the World Bank for the 2009 annual work programme under Phase II contains a number of elements in common with the 2009 annual programme under Phase I, and therefore the summary for Phase II will only cover those elements which are specific to the second phase.

94. As for targets, the 2008 programme for Phase II would ensure:

(a) National annual CTC consumption control target for 13 process agent applications will not exceed 6,945 ODP tonnes; and

(b) National annual CTC consumption control target for process agent applications, other than Phase I and Phase II, will not exceed 6,600 ODP tonnes, which has been revised down from 14,300 ODP tonnes as per decision 53/32.

95. A status report of the 2008 programme as of August 2008 is provided in the following table.

Table 2

STATUS OF 2008 PLANNED ACTIVITIES (AS OF AUGUST 2008)

Type of activities	Planned	Actual situation	CTC Reduction planned	CTC Reduction achieved
New policies and regulations	None	None	NA	NA
Production reduction			0 MT	0 MT
Consumption reduction	23 contracts	5 have been signed. Another 3 will be signed in 2008 for cyclodime projects. The rest will be signed in 2009.	-	602.29 MT
TA activities	3	One has been done. Two are under implementation.	0	0
Training activities planned	5	Two will be under PAII and three will be done under CTC/PAI sector plan	0	0

96. The table below gives further details by process agent application of the progress on the phase-out activities by the enterprises.

Table 3

SUMMARY OF IMPLEMENTATION OF PHASING OUT CTC AS PROCESS AGENT (PHASE II) AS OF AUGUST 2008

Application	Annual consumption (MT)		No. of Production Lines		Actions
	2003	2007	2003	2008	
Cyclodime	152.85	15.30	9	9	All 9 plants have stopped CTC production and closure will happen in 2008 and 2009.
CPP/CEVA	2,730.40	2,303.22	18 (including 3 new ones)	8	10 closed and dismantled. 3 stopped production. 5 in production.
MIC	574.54	1,036.98	6	5	1 closed and dismantled.
MPB	679.95	283.73	3	1	2 stopped production and dismantled. 1 will stop in 2008 once CTC stock runs out.
Imidacloprid	264.81	198.20	4	1	1 converted. 2 closed and dismantled.
Buprofenzin	316.87	367.73	3	1	2 closed and dismantled.
Oxadiazon	57.00	0	3	0	1 stopped due to bankruptcy. 2 closed and dismantled.
CNMA	136.12	388.75	1	1	
Mefenacet	6.93	0.00	2	0	1 converted and the other dismantled.
DCBT	0.00	0.00	0	0	
Total	**4,919.47**	**4,593.91**	**49**	26	

97. The targets for the 2009 programme remain the same as those for 2008 other than those covered under Phases I and II, and the maximum allowable CTC consumption has been reduced from 14,300 ODP tonnes to 6,600 ODP tonnes. The details are shown in the table below:

Table 4

TARGETS UNDER 2009 ANNUAL PROGRAM

Target	National annual CTC Consumption in the PA Sector (Phase II)						
Indicators			**2009 (year of Program)**	**Reduction**	**Funding US$ million**	**Key actions required**	**Key dates**
		(ODP tonnes)					
CTC consumption	PAII enterprises		6,945	5,951	0.5	1. Issue CTC consumption quotas. 2. Sign CTC consumption phase-out contracts.	1. By March 31, 2009 2. By Sept 30, 2009
Max allowable amount of CTC used in process agent applications listed in the interim table A-bis of Decision XVII/8 and in potential future process agent applications as identified and reported by China in its annual verification reports			6,600	6,600	0.5	1. Issue CTC consumption quotas. 2. Sign CTC consumption phase-out contracts.	1. By March 31, 2009
Total			13,545	12,551	1.0		

98. Apart from the CTC applications CPP/CEVA and MIC where the non-ODS technology is not yet mature enough to be implemented, all the other CTC applications will be phased out in 2009 either by conversion to non-ODS technology or closure. For the CPP/CEVA and MIC applications, the plants could choose either closure or to wait, however the total CTC consumption allowed after 2010 would only be 994 ODP tonnes per year.

99. For the new CTC process agent applications not covered by Phase I and II, around 30 plants will be involved to phase out their consumption through closure or conversion. These have to be completed in 2009. For funding allocations, the Ministry of Environment Protection (MEP) plans to distribute the un-committed US $31.07 million under the CTC/PAII Sector Plan plus US $1.5 million to be approved under the 2009 AP as follows.

Table 5

Planned Funding Allocation for Remaining Phase-out Activities

Year	**Activity**	**Number of CTC Consumption Reduction Contracts to be signed**	**Estimated funding Allocation (USD)**	**Comments**
2008	PAII phase-out	3	300,000	Contracts with three Cyclodime enterprises
2008	TA Projects	--	200,000	
2009	TA Projects	--	200,000	
2009-2011	PAII phase-out	20	16,500,000	Contracts with all remained PA II enterprises listed in the 2009 AP.
2009-2010	New PA phase-out	30	15,000,000	Contracts with all new PA enterprises.

Year	Activity	Number of CTC Consumption Reduction Contracts to be signed	Estimated funding Allocation (USD)	Comments
2010	TA Projects	--	370,000	At least the following three will be carried out for both CTC/PAI and PA II sectors: 1. Performance audit for the 2009 APs; 2. PCR preparation; 3. Sum-up workshop for the PA sector.
Total	**--**	**53**	**32,570,000**	**--**

100. The submission has five annexes: Annex I provides a list of CTC producers and their status as of June 2008; Annex II contains information on PA enterprises under Phase II, which has five tables providing details on ODS consumption for each application between 2001-2007, production lines of each application, list of PA enterprises in the sector plan, and CTC consumption for each sub-sector and enterprises. Annex III is a list of policies implemented and Annex IV is a list of TA activities by annual programme. Annex V is a list of contracts with PA II enterprises.

101. As in the submission for Phase I, there is a discussion on sustaining the results of the CTC sector phase-out plan beyond 2010. While most of the content is the same as the plan in Phase I, the discussion under Phase II addresses the need to phase out CTC in the CPP application because, depending on the success of the non-ODS technology that is the preferred choice of the enterprises concerned, the enterprises are prepared to cut CPP production in order to enable the CTC consumption level to remain within the allowed level after 2010, which is 994 ODP tonnes per year.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

102. The implementation of Phase II of the CTC sector plan has been proceeding as planned between 2005 to 2007 and the annual reductions were achieved and verified. Progress on the 2008 annual programme indicates the same results towards the end of the year. The proposed 2009 annual programme contains the targets consistent with the Agreement and work plan to achieve them. However the tasks to be achieved in 2009 are considerable because it will be the final year of the phase and there are a significant number of phase-out contracts to be concluded and implemented. This is especially true of the non-ODS technologies for MIC and CPP applications which are not ready for implementation as yet and that will need a decision by the plants by the end of 2009 to either close or cut back on CTC consumption to enable China to stay compliant with the targets of the sector plan.

103. However, MEP has set up a relatively functioning policy framework to control CTC production, consumption and sales. The monitoring system is rather comprehensive and will be further strengthened by the on-line monitoring of CTC producing plants. That will be required after 2010 when there will be reduced monitoring from the implementing agencies in terms of verifications, and the responsibility will be transferred to MEP to ensure the continued and sustained results of the sector plan. This is important in view of the unintended CTC production and the dual usage of CTC.

RECOMMENDATION

104. The Secretariat recommends that the Executive Committee:

(a) Approves the 2009 annual work programme of Phase II of the sector plan for phasing out CTC production and consumption for process agents at US $1.5 million, and the associated support cost at US $112,500, with the understanding that the request for funding and support costs will be submitted by the World Bank to the 58th Meeting together with a verification report on the implementation of the 2008 annual programme.

SECTOR PLAN FOR CFC PRODUCTION PHASE-OUT: 2009 ANNUAL PROGRAMME

Introduction

105. The World Bank is submitting to the 56th Meeting of the Executive Committee, on behalf of the Government of China, the request for the approval of the 2009 annual work programme of the Agreement for the China CFC production sector. This is with the understanding that approval of funding of US $7.5 million plus US $562,500 as support cost for the implementation for the 2009 programme will be requested at the first meeting of that year based on satisfactory performance of the programme in 2008, as per the Agreement. The 2009 work programme is not attached but could be made available upon request.

Background

106. Since its approval by the Executive Committee in 1999, the China Production Sector Phase-Out Agreement has been successfully implemented between 1999 and 2008 to reduce the number of CFC-producing plants from 37 in 1999 to one in the second half of 2007, and the level of CFC production from 50,351 ODP tonnes in 1997 to 6,289 ODP tonnes in 2007 as verified by the World Bank. CFC production in China was terminated as of 1 July 2007 with only one facility remaining to produce no more than 550 ODP tonnes of CFCs for the production of MDIs in 2008 and 2009.

107. The table below sums up the key data from the China CFC production sector plan and from the 2008 and 2009 work programmes.

Table 1

Country	People's Republic of China
Project title:	Sector Plan for CFC production phase-out in China
Year of plan	2009
# of years completed	10
# of years remaining under the plan	1
Ceiling for 2008 CFC production (in ODP tonnes)	550 ODP tonnes
Ceiling for 2009 CFC production (in ODP tonnes)	550 ODP tonnes
Total funding approved in principle for the CFC sector plan	US $150 million
Total funding released from MLF as of December 2008	US $142.5 million
Total funding disbursed from World Bank to China (as of June 2008)	US $123 million
Level of funding requested for 2009 Annual Plan	US $7.5 million

Project description

108. The submission has two parts: Part A is a summary report on the implementation by China of the Sector Phase-Out Agreement since its approval in 1999, including progress achieved in the

implementation of the 2008 annual programme as of August 2008; and Part B is the proposed 2009 work programme. There is also a short discussion of a tentative plan to allocate the remaining fund balance from the sector plan in 2010 and beyond which is included in the introduction part of the submission from the World Bank. The following are the most salient features of the summary report.

109. Implementation of the China Production Sector Phase-Out Agreement between 1999 to 2008 has reduced the number of CFC-producing plants from 37 in 1999 to one in 2007, and CFC production from 50,351 ODP tonnes in 1997 to 6,289 ODP tonnes in 2007. The annual production each year has been confirmed by both a national audit of the annual programme conducted by the China National Audit Office and an international verification of the production commissioned by the World Bank. Starting from the 2004 annual programme, implementation of the CFC production closure programme began to establish linkages with other related sector plans under implementation in China. For instance the verification under this programme has provided monitoring on China's compliance with the Montreal Protocol's control schedule on the production of CFC-13. Results from the verification also provide a basis for validating the reduction targets for CFC-11 under the foam sector strategy.

110. The results of the verification of the 2007 work programme confirms that China has realized the accelerated CFC production phase-out two and a half years ahead of the Montreal Protocol schedule as well as the original CFC phase-out agreement with the Executive Committee.

111. Under the 2008 Annual Programme, two kinds of activities have been planned and carried out in China. One was to issue the CFC production quota of 550 ODP tonnes to the only one remaining producer, to ensure the actual CFC production is within the control target as per the accelerated phase-out plan (APP) agreement. The other was to establish and implement the CFC sales management system, regulating the CFC sales and consumption of national stockpiled CFCs for pharmaceutical aerosol sector and refrigeration service sector as well as newly producing CFCs for MDI uses in 2008 and 2009.

112. In order to ensure that the stockpiled CFCs and those newly produced in 2008 and 2009 are used only for servicing of refrigeration equipment, pharmaceutical aerosol and MDIs rather than other consumption applications, the Ministry of Environmental Protection (MEP) has set up the CFC sales management system. A formal Circular on the "CFC Management Plan" and "CFC Sales Register Management System" was issued on 10 March 2008. According to the Circular, CFC dealers and producers should file an application and be registered. The applications by the dealers will be reviewed and approved by MEP and CFC sales licenses will be issued to them if they meet the requirements. As of August 2008, 4 CFC producers and 39 CFC dealers had received 2008 CFC sales licenses issued by MEP.

113. A number of technical assistance activities were planned in 2008, among them are the training of CFC dealers and assessment of impact on CFC producers of the CFC production phase-out in China. The latter project is aimed at assessing the impact of the production phase-out on the 37 CFC producers. The results will also assist MEP in drafting the project completion report of the sector plan. The TA activity is planned to start in the fourth quarter of 2008.

114. Part B provides the data on the proposed 2009 work programme which is focused on ensuring that CFC production in 2009 does not exceed 550 ODP tonnes for MDI uses, and that CFC production beyond 2010 is zero except for the production for any exempted uses approved by the Parties. China will continue implementing the policies that have enabled it to effectively manage the CFC production phase-out. Emphasis will be placed on enforcing the import/export control regime and making sure that no more than 50 ODP tonnes of CFCs be exported in 2009 in line with the accelerated phase-out plan (APP). The new system for registering CFC dealers will be implemented to ensure the management of the national CFC stockpiles in the years to come.

115. The new "ODS Management Regulation", which has been cleared by MEP and submitted to the State Council for review and approval in January 2007, is expected to be approved by the State Council in 2009. It is foreseen that this Regulation would serve as a solid legal basis for sustainable ODS phase-out.

116. Annex I of the submission includes 13 tables, which provide a brief history of the results of each of the 10 annual programmes implemented to date covering names of enterprises, CFC type, capacity, production level and the status of the plant (closed or producing) in 2008. The result of implementing the 2008 programme will be verified by the World Bank and reported to the first meeting of the Executive Committee in 2009.

117. The submission of the World Bank includes in Annex II an updated list of HCFC-22 producing enterprises in China as per the Agreement. A new plant that started production in 2008 has been added to the list from last year and the total number of producers is now 20.

118. Annex III contains 10 tables that provide information on the technical assistance programme by year from 1999 to 2008. Annex IV provides information on the other activities implemented under the sector plan, such as the funding of the establishment of the HFC-134a production facility. Annex V is a list of the CFC producing plants with their current status.

119. The submission estimates that there will be an unspent fund balance of US$ 8.5 million from the sector plan in 2010 and beyond and proposes the following tentative plan to allocate the funds, as set out in the table below:

Period	Activity	Tentative Allocation (USD)	Comments
2009-2013	Recruitment of national and international expertise for technical support, and organization of the technology workshop on ODS alternatives, etc.	500,000	To provide technical support and suggestions and comments to the government on the ODS phase-out technical issue
2009-2012	Operation cost for China Compliance Centre (CCC)	3,300,000	To support the operation of the NOU for achieving the sustainable compliance of MP
2009-2012	ODS import & export management activities like some training of the customs	500,000	Strengthening the capacity of the Import and Export Management Office (IEMO) and General Administration of Customs (GAC) to prevent illegal ODS trade
2009-2013	Research and development on ODS alternatives	4,200,000	Support to R&D on ODS alternatives and their production
Total		8,500,000	

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

120. The progress report on the results to-date of the 2008 annual work programme indicates the programme is well positioned to achieving the results set for the year. This however has to be eventually confirmed by the verification to be carried out by the World Bank in the beginning of 2009.

121. The 2009 work programme proposes a series of actions that would ensure that CFC production would not exceed 550 ODP tonnes, manage the CFC national stock to cover the remaining consumption in the refrigeration servicing sector and the production of MDIs and exercise control of CFC exports in compliance with the requirements of the accelerated phase-out plan (APP).

122. The submission estimates an unspent fund balance of US $8.5 million after 2009 and includes the proposal to allocate the balance, which is to cover a number of activities to be implemented between 2009-2013. The sector plan agreement in footnote 2 allows the "savings from earlier years to be used for funding 2010 phase-out", however does not cover any year beyond that. While the Secretariat has no issues with regard to recommending the approval of the proposed 2009 annual work programme, with the disbursement to take place at the 57th Meeting, together with the verification of the 2008 annual programme, the Secretariat wishes to clarify with the Executive Committee that the wording of footnote 2 in the agreement allows the allocation of the unspent fund balance beyond 2010 as proposed in the submission. If the interpretation of the footnote enables the fund balance to be spent beyond 2010, there is the issue of the continued responsibility of the World Bank, including financial oversight and performance verification over the programme beyond 2010. That should be clarified as well.

RECOMMENDATION

123. The Secretariat recommends that the Executive Committee:

(a) Clarifies whether the wording in the sector plan agreement allows China to spend the unspent fund balance beyond 2010 and the implications; and

(b) Approves the 2009 work programme of the China CFC production closure programme at US $7.5 million and associated support cost of US $562,500, noting that the request for funding and support costs will be submitted by the World Bank to the 57th Meeting together with a verification report on the implementation of the 2008 annual programme.

STRATEGY FOR GRADUAL PHASE-OUT OF 1,1,1-TRICHLOROETHANE (TCA) PRODUCTION (SECOND STAGE PROGRAMME)

PROJECT DESCRIPTION

Introduction

124. The World Bank, on behalf of the Government of China, is submitting to the 56th Meeting the second stage implementation programme of the 1,1,1-trichloroethane (TCA) production sector plan in China and requesting the release of US $0.7 million and the associated support cost of US $52,500 for the World Bank. The Secretariat is not attaching the submission of the World Bank but is ready to provide it upon request by members of the Executive Committee.

Background

125. The Executive Committee at its 43rd Meeting in 2004 approved in principle a total of US $2.1 million for the implementation of the Agreement for the phase-out of TCA production in China, under which the Government of China is committed to completely phasing out the production of TCA before January 2010, 5 years in advance of the requirement of the Montreal Protocol. At the same meeting, the Executive Committee also approved and disbursed US $1.4 million for the implementation of the 2004-2008 programme. The second tranche of funding, which is also the final tranche, is scheduled for release at the last meeting in 2008 upon submission of the implementation programme for 2009 and beyond. The targets and funding of the Agreement are reproduced below.

Table 1

	Baseline	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010-2014**
Montreal Protocol Reduction Schedules	113	113	79	79	79	79	79	34
1. Max allowable total production of TCA (in ODP tonnes) under this agreement	113	113	79	79	79	79	79	0
2. New reduction under this agreement	0	0	34	0	0	0	0	79
3. Impact of previously approved projects	0	0	0	0	0	0	0	0
4. Total annual reduction of the substance (ODP tonnes)	0	0	34	0	0	0	0	79
5. Agreed MLF funding for the country		1.4	0	0	0	0.7	0	0
6. IA support costs		0.105	0	0	0	0.0525	0	0

Rows N° 1, N° 2, N° 3 and N° 4 are in ODP tonnes. Rows N° 5 and N° 6 are in USD million.

126. The agreement gives a mandate to the World Bank, as the implementing agency, for "providing verification to the Executive Committee that the Targets have been met and associated annual activities have been completed as indicated in the implementation programme and annual reporting on the implementation of the 2004-2008 Implementation Programme."

127. There were four TCA plants in China in 2002 (base year for the sector plan). The total TCA production was 1,205 MT (or 121 ODP tonnes) in 2002. A profile of the 4 plants in 2004 is shown below:

Table 2

No.	Name of Enterprise	Capacity (MT)	Status
TCA 1	Luyue Chemical Industry Co. Ltd	1,000	Main equipment dismantled
TCA 2	Nantong Shiyang Chemical Industry	800	Producing
TCA 3	Changshu 3F Fluorochemical Industry Co. Ltd.	1,200	Idle
TCA 4	Zhejiang Juhua Chemical and Mining Industry Co.	1,500	Producing

128. The scope of the first stage programme between 2004-2008 includes:

(a) Complete dismantling of the production facilities of TCA 1 and TCA 3 once this sector plan is approved;

(b) Closure of TCA production in TCA 2 after this sector plan is approved, plus dismantling of the production facility; and

(c) Control of TCA production in TCA 4 according to table 1, to reduce TCA production to 79 ODP tonnes/year by 2005.

Verification of TCA production in 2004 through 2007

129. The verifications were carried out as part of the annual CFC verification by Mr. Tony Vogelsberg, the consultant who had been implementing CFC production verifications in China for the World Bank for the past eight years. The verifications of the 2004, 2005 and 2006 TCA production were carried out on 26 January 2005, in February 2006 and in January 2007 respectively. The results of these verifications were submitted by the World Bank to the Executive Committee at its 51st Meeting in 2007 and were noted by the Committee. The verifications confirmed that China had closed and dismantled plants TCA1, TCA2 and TCA3 and that TCA production by the plant TCA4 for 2004, 2005 to 2006 was within the maximum allowable level specified in the Agreement. Verification of 2007 TCA production was conducted by the World Bank in January 2008 and the report was submitted to the 54th Meeting in 2008. A summary of the last verification is presented below.

130. Zhejiang Juhua Chemical and Mining Industry Co., or TCA4 is the only active TCA producer and was visited by the verification team in January 2008. The plant, with a designed capacity of 1,500 tonnes per annum started production in 1995. The plant operates a batch process, reacting HCl, a by-product from its chloroparaffin process with the vinylidene dichloride (VDC) to produce a crude product. The VDC/TCA crude is then fed to a batch distillation packed column where unreacted VDC is removed before the TCA is vaporized and collected as the final distillate. The final distilled TCA is collected in a receiver tank and packaged directly in drums, with transfer slips documenting the movement from the production unit to the warehouse.

131. The verification team examined the daily and monthly record of VDC charge to the batch reactor to derive the VDC consumption. Transfer slips from TCA production to the warehouse were examined with data on date, number of drums, net weight of each drum and total weight for each of the eleven months of the year that the plant was operating. All VDC shipment invoices from supplier against the receipts reported by the plant for each month were examined. Since HCl is a by-product of the chloroparaffin process, it is not measured by the plant or recorded. At the same time the financial analyst of the verification team examined the VAT invoices and the product delivery slips of finished product from the warehouse retained by the accounting office of the plant as well as the material receipt vouchers for VDC purchases co-signed by the warehouse staff and the person responsible for VCD purchase.

132. The verification team was pleased with the improvement in record keeping at the plant as a result of following up on its recommendations. The verification team concluded that Zhejiang Juhua Chemical and Mining Industry Co. operated 210 days and produced 778.825 MT, or 77.88 ODP tonnes in 2007. Since this plant is the only active plant, its production represents the total TCA production of the country. The target in the Agreement for 2007 is 79 ODP tonnes. As a result China complied with the target in the Agreement.

Other activities in stage one of the sector plan and the targets and main activities in stage two between 2008-2010

133. During stage one of the sector plan China, through the Ministry of Environment Protection (MEP), issued in September 2004 the "Circular on Implementing Quota System for TCA Production" in order to control TCA production. In October 2006, MEP issued another circular which placed TCA sales and consumption under a licensing system. Within the period of stage one, 10 technical assistance activities were carried out to train audit professionals in conducting ODS audits.

134. For the second stage of the sector plan, one of the major activities would be the signing of the contract with TCA4 to close down and dismantle the plant no later than October 2009 so that production of TCA could be terminated by January 2010. The verification of the close down would be done in early 2010.

135. It is anticipated that the existing policy framework would continue to facilitate the completion of the sector plan, especially the ODS Management Regulation which is expected to be issued in 2009.

RECOMMENDATIONS

136. The Secretariat recommends that the Executive Committee:

(a) Takes note of the verification report on the TCA production in China for the year 2007 and the success achieved in stage one of the sector plan between 2005 to 2007; and

(b) Approves stage 2 of the sector plan for the period 2008 to 2010 at a funding level of US $0.7 million and the associated support cost of US $52,500 for the World Bank.

VERIFICATION REPORT ON METHYL BROMIDE FEEDSTOCK USE FOR THE PERIOD OF 2005-2007

Introduction

137. UNIDO has re-submitted to the 56th Meeting on behalf of the Government of China the work programme of Phase II of the sector plan for the phase-out of methyl bromide (MB) production covering the period of 2008-2010 and requested the release of US $3 million plus agency support cost of US $225,000, together with the verification report of methyl bromide feedstock use in China for the period of 2005-2007. This is done by UNIDO in compliance with decision 55/35 which calls for reconsideration of the funding request at the 56th Meeting subject to verification being completed.

Background

138. At its 47th Meeting in 2005, the Executive Committee decided to approve in principle a total of US $9.7 million to assist China in complying with the Montreal Protocol's control schedule for the production of methyl bromide (MB) for controlled uses, and disbursed the first tranche of US $3 million for the implementation of Phase I of the sector plan covering the period of 2005-2007. The following table which is extracted from the Agreement covering the sector plan sets out the annual MB production reduction targets and the schedule of funds to be released.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Max. annual allowable production of methyl bromide for controlled uses (ODP tonnes)	621.0	600.0	570.6	390.0	250.0	209.0	176.0	150.0	100.0	50.0	0.0*	-
Project cost (US$ '000)	3,000	0	0	3,000	0	0	2,000	0	0	1,790	0	9,790
Agency fees (US$ '000)	225	0	0	225	0	0	150	0	0	134	0	734
TOTAL MLF Grant (US$ '000)	3,225	0	0	3,225	0	0	2,150	0	0	1,924	0	10,524

*save for QPS, feedstock and critical uses to be approved by Parties.

139. The Agreement stipulates that "The funds are to be approved at the second meeting in the years indicated above, upon the submission by UNIDO and the acceptance by the Executive Committee of the verification of the reduction targets in the preceding years specified." UNIDO submitted to the 55th Meeting the verification of the MB production in 2005-2007 to meet the condition for the release of the second phase funding for 2008-2010; however the verification did not examine the consumption of methyl bromide either for controlled use or exempted use to validate the results of the verification of the MB producers. This is not consistent with the procedure of the Executive Committee in the verification of the production of ODS with dual usage. Additional work was requested of UNIDO to complete the verification.

Verification of MB feedstock use in China in 2005 through 2007

140. The verification was carried out by a team of 4 consultants from China in the second half of July 2008. The objective of the verification was to confirm that the MB consumption by feedstock users was consistent with the data reported by the users and matched the sales data from the MB producers.

141. The verification selected 14 feedstock users whose total MB consumption represented more than 60 per cent of the total MB feedstock consumption in China each year between 2005 and 2007. The selection of the sample covered users of different levels of MB consumption, 3 users with annual

consumption of over 100 mt of MB; 4 between 30 to 100 my; 4 between 10 to 30 mt and 3 with less than 10 mt. The users covered all the 4 sectors where MB is used as feedstock, namely pharmacy, agrochemical, cosmetics and other fine chemicals. The 14 users received their MB supply from all of the 3 MB producers in the country.

142. The verification team first designed and distributed to all the enterprises a questionnaire to collect data prior to their field visits. At the plant visit, the team undertook the following activities:

(a) Understanding the background of the enterprise through communication with managers and relevant personnel of the enterprises and by examining certificates including the business license, the pharmaceutical manufacturing permit and the safety manufacturing permit, the group learned of the scale, business scope and product category of each enterprise.

(b) Verifying the purchase of methyl bromide by examining original supporting documents, which included purchase invoices and warehousing entry of methyl bromide and the detailed account of raw materials, the group examined the source of supply and the amount of methyl bromide purchased by each enterprise. These figures were then crosschecked with the data provided by producers in the methyl bromide production audit.

(c) Verifying the use of methyl bromide by examining original supporting documents which included the material requisition for methyl bromide, the batch production record, the detailed account of raw material and the warehousing entry and sales account for the final product. The group examined whether methyl bromide purchased by each enterprise was used completely to manufacture the final products.

(d) Understanding the production process by looking at the production process and facilities on site, discussing with engineers and verifying and examining unit consumption. The group examined whether methyl bromide was totally reacted and transformed into a stable intermediate or the final product in the course of production, whether there was any leakage of methyl bromide, and whether proper technical measures were taken to prevent such leakage. After examining the original documents of the batch production record, the warehousing entry of the stable intermediate or the final product and the sales account of final products, the unit consumption of methyl bromide was calculated by dividing the annual consumption of methyl bromide by the annual output of the final product (or the stable intermediate).

143. In validating the MB purchase data from each enterprise against the sales data from the MB producers, the verification team found that the data from the two sources matched in the majority of the cases except in 3 of the enterprises where a discrepancy was found. However this difference was explained to be due to two reasons:

(a) The amount of methyl bromide purchased by each feedstock enterprise every year is counted on the basis of the date of issue of the commercial invoice; while the sales data reported by manufacturing enterprises (methyl bromide producers) are counted on the basis of the products out of the warehouse record (date of shipment). Hence, there might be differences in the timing of recording the transactions if these took place at the end of one year and at the beginning of the following one.

(b) The other reason for the data discrepancy is due to the recording of methyl bromide returned or exchanged due to unsatisfactory quality.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

144. The supplementary verification by UNIDO of the feedstock use of MB in China between 2005 and 2007 is a commendable effort. It covers a significant size of the MB consumption in China for feedstock use and includes a combination of feedstock users with different sizes of MB consumption and from all the sectors. It examines the MB purchase data from the users against the sales data provided by the MB producers and confirms that the MB from the producers has been sold for the uses intended. It provides confidence in the results from the verification of the MB producers. With the supplementary verification, UNIDO has completed the verification process for ODS with dual usage.

145. The verification which was conducted at the 3 MB producers concludes that the MB production in China for controlled use for the period 2005 to 2007 is within the maximum allowable level as stipulated in the Agreement and is shown as follows.

Year	maximum allowable production (MT)	Quota Issued (MT)	Actual production (MT)
2005	1035	1030	730.739
2006	1000	1000	985.085
2007	951	900	686.275

RECOMMENDATIONS

146. The Secretariat recommends that the Executive Committee

(a) Takes note of the supplementary verification of the MB feedstock use in China for 2005 to 2007; and

(b) Approves the second phase of the methyl bromide production sector plan in the amount of US $ 3 million and the associated support cost of US $225,000 for UNIDO.

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PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS

China

(I) PROJECT TITLE	AGENCY
Refrigeration Servicing	Japan, UNEP, UNIDO

(II) LATEST ARTICLE 7 DATA (ODP Tonnes)			Year: 2007	
CFC: 5832.1	CTC: 265.1	Halons: 594.4	MB: 405	TCA: 251.1

(III) LATEST COUNTRY PROGRAMME SECTORAL DATA (ODP Tonnes)						Year: 2007							
Substances	Aerosol	Foam	Halon	Refrigeration		Solvent	Process Agent	MDI	Lab Use	Methyl Bromide		Tobacco fluffing	Total Sector Consumption
				Manufacturing	Servicing					QPS	Non QPS		
CFC	440.	237.4			2,854.2			340.5					3,872.1
CTC									265.1				265.1
Halons			788.3										788.3
Methyl Bromide										1,059.5	313.5		1,373.1
TCA						251.1							251.1

(IV) PROJECT DATA			2004	2005	2006	2007	2008	2009	2010	Total
Montreal Protocol Consumption Limits		CFC	57,818.7	28,909.4	28,909.4	8,672.8	8,672.8	8,672.8	0.	
Maximum Allowable Consumption (ODP Tonnes)		CFC	5,083.	4,572.	3,790.	2,997.	2,317.	1,786.	1,181.	
Project Costs (US$)	Japan	Project Costs	1,000,000.	3,000,000.						4,000,000.
		Support Costs	130,000.	390,000.						520,000.
	UNIDO	Project Costs	550,000.		700,000.	700,000.	700,000.	785,000.		3,435,000.
		Support Costs	41,250.		52,500.	52,500.	52,500.	58,880.		257,630.
	UNEP	Project Costs		450,000.						450,000.
		Support Costs		58,500.						58,500.
Total Funds Approved in Principle (US$)		Project Costs	1,550,000.	3,450,000.	700,000.	700,000.	700,000.	785,000.		7,885,000.
		Support Costs	171,250.	448,500.	52,500.	52,500.	52,500.	58,880.		836,130.
Total Funds Released by the ExCom (US$)		Project Costs	2,000,000.	3,450,000.	0.	1,400,000.	0.	0.		6,850,000.
		Support Costs	205,000.	448,500.	0.	105,000.	0.	0.		758,500.
Total Funds Requested for Current Year (US$)		Project Costs					700,000.			700,000.
		Support Costs					52,500.			52,500.

(V) SECRETARIAT'S RECOMMENDATION:	For blanket approval

REFRIGERATION SERVICING SECTOR CFC PHASE-OUT PLAN (FIFTH TRANCHE)

PROJECT DESCRIPTION

147. On behalf of the Government of the People's Republic of China (China) UNIDO, as the lead implementing agency, has submitted to the 56th Meeting of the Executive Committee a funding request for the fifth tranche of the refrigeration servicing sector CFC phase-out plan for China, at a total cost of US $700,000 plus agency support costs of US $52,500. The request was accompanied by a report on project implementation during 2007 as well as part of 2008, and an annual implementation plan for 2009. The submission also contained a verification report for the CFC-12 consumption for China in 2007; under this sector plan, the CFC-12 consumption of China is the agreed maximum allowable consumption for the sector.

Background

148. The refrigeration servicing sector CFC phase-out plan for China was approved at the 44th Meeting of the Executive Committee, with UNIDO as lead agency and Japan as cooperating bilateral agency. The total funds approved in principle for the plan amounted to US $7,885,000 plus agency support costs of US $836,130. The Agreement was also amended at the 45th Meeting to also include UNEP as a cooperating implementing agency. The refrigeration servicing sector CFC phase-out plan is aimed at supporting China in meeting its Montreal Protocol obligations, including the complete phase-out of the controlled use of CFCs prior to 2010. In order to achieve these targets, a series of investment, non-investment, technical assistance and capacity-building activities will be, and are being, implemented by China with the assistance of the agencies.

Verification of the consumption for the year 2007

149. The Agreement between China and the Executive Committee specifies a maximum allowable CFC-12 consumption for the refrigeration servicing sector. This consumption is determined by verifying the Article 7 data, deducting from it verified consumption data from various sector plans where CFC-12 is being phased out in parallel, as well as the establishment of a national stockpile, meant to supply CFC-12 to the Refrigeration Service and MDI Sectors beyond the accelerated closure of the production sector in 2007.

150. The Agreement between China and the Executive Committee requires that the Article 7 consumption of CFC-12 in China be independently verified, while consumption in the refrigeration servicing sector is to be confirmed through China's own monitoring and auditing activities:

(a) The verification of the 2007 consumption of CFC-12 was in itself based on three verifications: the results of the World Bank's production sector verification, and the results of the verification of imports and exports, both of which were carried out under this sector plan. The imports of CFCs to China in 2007 were zero. With exports of 397.4 ODP tonnes, the total consumption of CFC-12 in China was 4,785.0 ODP tonnes in 2007. This consumption is 1,020.0 ODP tonnes below the limit of 5,805 ODP tonnes specified in the Agreement between China and the Executive Committee; and

(b) The CFC-12 consumption in the refrigeration servicing sector was confirmed to be 2,688.5 ODP tonnes. This was determined, *inter alia*, by deducting from the CFC-12 consumption of China 1,450 ODP tonnes which were used for stockpiles. UNIDO provided the contracts between four manufacturers of CFC and the Government of China for the establishment of such a national stockpile, which were signed in September 2007 and which specify quantities of CFC-11 and CFC-12 to be stockpiled, as well as a permit

system for the release of these stockpiles. The maximum allowable CFC-12 consumption for the year 2007 was 2,997.0 ODP tonnes; therefore, the CFC-12 consumption in China remained 308.5 ODP tonnes below the limit defined in the Agreement. Information about the total CFC consumption in the Refrigeration Service Sector was also provided, although this is not mandatory under the Agreement. In addition to using CFC-12, the refrigeration service sector does actually also use a certain amount of other CFCs, mainly CFC-11 and CFC-115. The aggregated consumption of all CFCs in the sector was confirmed as 2,858.2 ODP tonnes.

Annual implementation report for the year 2007

151. Several achievements were realized under the technical assistance component of the plan, including the continued operation of the Monitoring and Management Information System (MIS), through which CFC recovery data and related training was monitored and reported on a quarterly basis; the launch of a year-long publicity programme in the domestic refrigeration servicing sub-sector; the production and distribution of publicity materials to the general public; and the commencement of policy development concerning the management of the refrigerant reclamation centre and destruction of ODS residue. In addition, work continued on a recovery and recycling survey and on the development of a code of good servicing practices in the industrial and commercial refrigeration, chiller, and domestic refrigeration sectors.

152. The activities related to training of trainers and technicians and delivery of equipment continued during the reporting period. In the MAC sector, 2,498 technicians were trained, and 788 sets of R&R equipment purchased and distributed to beneficiaries; these are 368 more sets than originally planned, owing to savings realized in the procurement process. Work on the establishment of reclamation centres commenced with the preparation of an overall implementation plan, the selection of a beneficiary for a demonstration project, and a feasibility study on the construction of one reclamation facility. Additional activities resulted in the recovery, by beneficiary MAC servicing stations, of 12,019.5 kg of CFC in 2007, and a further 1,752.3 kg during the first quarter of 2008. Automobile disposal stations recovered also recovered several 100 kg of CFC-12.

153. The following government actions were carried out: submission of the ODS Management Bylaw, which includes all requirements for CFC recovery and recycling in refrigeration servicing processes, and prohibits venting of CFCs; the establishment of a strict management system to monitor the sale of stockpiled CFCs; and the issuance of notices by SEPA and concerned Ministries obliging MAC servicing stations and vehicle disposal stations to recover refrigerants. A study was completed on “Management Regulations of Recovery & Dismantling Retired Vehicles”, while work continued on the “Study on the management policies and measures of recovery of refrigerant in the MAC servicing sector”, expected to be completed by September 2008. Policy research and development in the industrial and commercial refrigeration, chiller and domestic refrigeration sectors also commenced.

154. Several new and ongoing activities are planned during 2009. The management information system will be maintained, and will continue to operate with the primary objective of monitoring project activities in the MAC servicing and vehicle disposal sectors. The issuance of publication materials, such as posters, calendars, brochures for distribution to the public, will also continue. A second beneficiary will be identified for the reclamation centre component, and purchase, delivery and installation of the associated equipment will be undertaken. Identification of beneficiaries and purchase of equipment will be done with a view to extending the recovery of refrigerants to retired ships. Some training of refrigeration technicians is planned for 2009, depending on the funding available. Finally, there will be continued government action with a view to developing a decree restricting the venting and release of CFCs during disposal; ensuring that targets on limiting CFC consumption nationally, and in the servicing sector, are met; and facilitating the establishment of a CFCs collection and reclamation system.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

155. The Secretariat commends the efforts of China to recover refrigerant at the end-of-life of the related equipment. This refers to the ongoing effort to collect CFC-12 from cars at automobile disposal stations, but also to the planned activities related to retired ships, where CFC from their refrigeration equipment is also to be recovered. In regard to the impact of recycling at the end of life, the Secretariat requested more information from UNIDO and China. UNIDO reported that 2,437 cars with CFC air-conditioning were processed between approximately October and December 2007 by those disposal centres equipped with recovery equipment, yielding 210 kg of CFC. In the first quarter of 2008, 1,702 cars equipped with CFC air conditioning were processed, yielding 140 kg of CFC-12. In a further reply, UNIDO informed the Secretariat that the on-line system for customs is estimated to be put into trial operation in first quarter of 2009.

156. The support to the service sector to allow coping with the phase-out of CFCs is very broad and holistic in its approach. Unique elements are in particular the active management of future supply through a national stockpile and through broad introduction of recovery at the end-of-life beyond sub-sector boundaries. These efforts are likely to be sustainable to reduce not only CFC consumption and use, but also allow more responsible use of HCFCs and HFCs in the future.

157. The implementation of the 2007 annual plan has proceeded well, and, to the degree that an assessment is presently possible, the same is true for the implementation of the 2008 annual plan. The components foreseen for the 2009 plan appear meaningful. The implementation of the 2009 annual plan will largely or completely utilize the available resources under the overall plan, pending the timely completion of activities and potential differences between planned and actual expenditures in the years 2008 and 2009.

RECOMMENDATION

158. The Fund Secretariat recommends blanket approval of the fifth tranche of the project, with associated support costs, at the funding levels shown in the table below:

	Project title	Project Funding (US $)	Support Cost (US $)	Implementing Agency
(a)	Refrigeration servicing sector CFC phase-out plan (fifth tranche)	700,000	52,500	UNIDO

ODS PHASE-OUT IN CHINA SOLVENT SECTOR: 2009 ANNUAL PROGRAMME

PROJECT DESCRIPTION

159. On behalf of the Government of China, UNDP as the implementing agency has submitted the 2007 annual progress report and the annual implementation programme for 2009 for the solvent sector plan for ODS phase-out in China for consideration by the Executive Committee at its 56th Meeting. The total cost of the 2009 annual implementation programme as submitted is US $1,480,000 plus support costs for UNDP of US $111,000.

Background

160. The solvent sector plan for China was approved at the 30th Meeting of the Executive Committee at a total cost of US $52 million plus support costs for UNDP. Funds totalling US 49,040,000 plus support costs of US $4,178,875 for UNDP have so far been approved for the first eight annual tranches from 2000 to 2007 inclusive.

161. The phase-out is being achieved through a combination of investment activities targeting specific enterprises and a technical assistance programme for smaller enterprises managed through a voucher system. Consumption limits are maintained through regulation of production and imports. The reductions in production are controlled under China's production sector phase-out plans for CFCs and CTC. The use of CTC as a cleaning solvent has been prohibited since 1 June 2003 and the use of CFC-113 as a solvent has been prohibited since 1 January 2006. The only ODS solvent with remaining consumption is methyl chloroform (1,1,1-TCA) which, under the Plan, will be completely phased out by 1 January 2010.

Phase-out from investment projects and activities

162. A sub-project on ODS reduction contracts with 31 medium and large ODS consuming enterprises reached completion at the end of 2007. Completion of the sub-project on a voucher system for smaller enterprises is expected by the end of 2008, due to delays resulting from the Beijing Olympic Games. Spacer sprayer phase-out projects as well as reimbursement contracts with 21 enterprises were fully concluded in 2007.

163. TCA is the only remaining ODS solvent in use in China. Reimbursement projects for 12 and 13 enterprises were initiated in 2006 and 2007 respectively. All 12 enterprises in the 2006 programme had completed their phase-out of TCA by 2008. Of the 13 enterprises participating in the 2007 programme, one completed its phase-out activities in 2007, while three enterprises are expected by the end of 2008 and the remaining by the end of 2009. A summary of progress with the phase-out of ODS solvents through investment activities throughout the solvent plan was indicated in a table in UNDP's project submission, reproduced as Annex II to the present document. Cumulative phase-out achieved under the China Solvent Sector Plan up to 2008 is 2,689.5 ODP tonnes of CFC-113, an estimated 173.7 ODP tonnes of TCA, and 29.5 ODP tonnes of CTC.

Technical assistance activities

Combating illegal ODS activities

164. This sub-project was initiated in 2005. In 2007, an emergency response mechanism for dealing with illegal activities and an online reporting system were launched, and three such cases identified in 2007. A training workshop for environmental inspectors from 12 provinces, and three workshops for customs authorities were also held. Fifty ODS detectors were provided to Customs. For its efforts in

combating illegal ODS trade, the General Administration of Customs won an implementation award on the 20th anniversary of the Montreal Protocol in September 2007.

Ozone friendly provinces/cities demonstration project

165. At the time of the last report, eleven of the 12 provinces/cities that signed agreements in October 2005 to implement legislative and administrative actions to complete the phase-out of chlorofluorocarbons and halons had completed their legislative and public awareness actions, and were officially classified as ozone-friendly provinces/cities. The assessment of the final province/city, originally planned for September 2007, was rescheduled for August 2008.

Local Environment Protection Bureaus (EPBs) capacity building for compliance with the Montreal Protocol

166. UNDP and the Ministry of Environmental Protection (MEP), previously the State Environment Protection Agency (SEPA). agreed to initiate a new technical assistance sub-project aimed at strengthening the capacity of 18 additional provinces/cities to address and monitor ODS activities at the local level. The objectives are to: undertake public awareness, strengthen local capacity for monitoring and enforcement, strictly enforce regulations and laws on ozone layer protection, promote the use of alternative technologies, establish policies on ODS recovery, recycle and reuse, ODS destruction/disposal and essential use, and to establish an effective and sustainable long-term management mechanism.

167. A total of US $ 10 million has been allocated to the sub-project, of which US $5 million is from savings realized during the implementation of previous tranches of this sector plan, and US $5 million from the Accelerated Production Phase-out Plan implemented by the World Bank. Additional complementary funding of US $200,000 has been allocated to the Sichuan Province in view of the Wenchuan earthquake, which severely weakened monitoring and inspection capacity. To date, in most provinces/cities, a series of publicizing, training and monitoring activities have been undertaken.

Research programme on TCA substitutes and technology in the solvent sector

168. This sub-project aims at identifying specialized substitutes for, and alternative technologies to, TCA. The China Information Centre of Cleaning Technology has carried out extensive research and identified substitutes for use by major TCA consuming sub-sectors. Unknown applications of TCA have also been discovered, for example, silicon rubber coating in the power industry, which now accounts for almost half of China's annual TCA consumption.

Public awareness and training

169. In May 2007, a seminar to improve cooperation on ODS phase-out between the Ministry of Environment, regional environmental agencies, industry associations and relevant community groups was held. A publicity awareness/ training meeting was held in May 2008 on TCA phase-out activities. Approximately 1,000 staff from the local authorities of the 12 ozone-friendly provinces/cities were trained on the electronic remote training system launched in 2005. Finally, 30 staff of the MEP's Foreign Economic Cooperation Office (FECO) were trained on UNDP's project management procedures in September 2007, with a view to improving the efficiency of project implementation.

Verification of 2007 ODS consumption

170. The Secretariat received verification of the total consumption for non-exempt TCA uses in 2007; the term "non-exempt" refers to the agreement which stipulates consumption targets for TCA "save for any TCA solvent consumption that may be agreed by the Parties to be essential for China after 2015". This verification is using the results of the "Audit Report of China TCA Production Phase-out Sector Plan

Project" as well as import and export data. The verification of the consumption of CFC-113 and CTC is not necessary under this sector agreement, since other relevant agreements between China and the Multilateral Fund are covering the subject; the consumption of both substances is zero. The 2007 national consumption of CFC-113, TCA and CTC is presented in the report and is reproduced below:

ODS Solvent Consumption for the Year 2007 (ODP tonnes)

	CFC-113	**TCA**	**CTC**
	(ODP tonnes)	(ODP tonnes)	(ODP tonnes)
Consumption Control Target	0	254	0
Production	-	77.883	-
Import	-	173.193	-
Export	-	-	-
Solvent Consumption	0	251.076	0

National level consumption

171. Information on ODS solvent production was obtained from data reported by the TCA manufactures to FECO/ MEP and "the Audit Report of China TCA Production Phase-out Sector Plan Project" issued by the China National Audit Office. Information on import and export of each type of ODS solvent was acquired from the Administration Office of ODS Imports and Exports, which was jointly set up by the Ministry of Commerce, MEP, and the General Administration of Customs. The annual national consumption of each type of ODS solvent is obtained by deducting exports from the total of production and imports.

172. Based on official data and statistics on China's CFC production, import and export obtained by MEP and verified as above, the total level of national consumption of CFC-113, TCA and CTC in 2006 has met the phase-out targets specified in the Agreement.

Enterprise-level consumption

173. The China National Audit Office audited 6 enterprises, five of which were participating in the TCA phase-out contracts, and one in the phase-out reimbursement contracts. The audit verified that the total TCA consumption phased out by the 6 enterprises was 19.5 tonnes, an amount equal to the reduction for which the contracts had been issued. It also reported on certain aspects of the implementation.

Unspent balances from previous tranches

174. The total funding released by the Executive Committee, the funds disbursed or committed by the Implementing Agencies and the unspent balances from funds released, are indicated in the table below for the complete period 2000-2007 and for 2008 to date.

Year	Funding Approved by ExCom	Value of Contracts Signed	Funds Disbursed	Funds Committed but not disbursed	Balance Uncommitted
	(US$)	(US$)	(US$)	(US$)	(US$)
2000-2007	47,560,000	41,726,066	31,393,172	10,332,894	5,833,934
2008	1,480,000	862,826	4,563	858,263	617,174
Total	49,040,000	42,588,892	31,397,735	11,191,157	6,451,108

175. As was the case in previous reports, the large uncommitted balance is attributed to the withholding of payments until phase-out has been completed. Additionally, MEP and UNDP delayed payment to beneficiaries until pre-disbursement scrutiny had been undertaken, in order to verify the levels of consumption and the authenticity of procurement and contractual services.

176. MEP continues to prefer to retain savings realized at this stage to cover any unforeseen requirements later in the project and to ensure sufficient funding to cover all beneficiaries. A total amount of US $42.6 million (86.9 per cent) of contractual agreements for phase-out have been signed against approximately US $49 million released by the Executive Committee. Overall, 13.3 per cent of the funds approved remain uncommitted.

The 2009 annual implementation programme

177. The 2009 Annual Implementation Programme will continue to implement and complete the TCA phase-out activities initiated in 2007 and 2008. New activities will be introduced to phase out 84 ODP tonnes of TCA, contributing to the achievement of the 2008 consumption control limits. For 2009, phase-out activities at the enterprises level will be achieved through direct phase-out and the retroactive reimbursement mechanism. Necessary technical assistance activities, public awareness raising, a study on substitute technologies, legislative measures, and monitoring and enforcement mechanisms are also included in the 2009 Annual Implementation Programme. Such activities are now becoming more important in terms of sustaining phase-out of CTC and CFC-113 and eventually TCA.

178. The technical assistance activities proposed in 2009 have been described in detail in the project proposal. They are in the field of public awareness, training on the new phase-out sub-project for TCA, general verification and supervision of the phase-out plan, research and training workshop on TCA alternative technologies, a study tour on phase out management and effective substitution of ozone depleting solvents, implementation of a TCA quota & licenses system, continuation of combating illegal production, trade and consumption and an investigation on nPB application in China's solvent sector.

Government actions

179. The government's activities proposed for 2009 will include continuing to identify and monitor enterprises that have undertaken phase-out at their own initiative, the verification of phase-out and reimbursement of phase-out costs, and identification of enterprises that choose to undertake gradual phase-out. An agreement will be finalised with these enterprises, reduction contracts signed, and annual phase-out verified.

180. Further, the government will monitor the CTC and CFC-113 solvent ban and TCA consumption enterprises who have completed the phase out. It will continue to implement the regulation regarding the management of TCA through a quota and license system, and will combat illegal production and trade. Finally, public awareness activities will also be carried out.

181. The total amount requested for the 2009 annual implementation programme is US $1,480,000 plus support costs of US $111,000 for UNDP. Prior to 2005, funding was requested at the first meeting of the year, but since the 2006 tranche, UNDP and China are now requesting approval of funding at the last meeting of the preceding year, together with submission of the annual report on implementation of the previous tranche. Of the total amount, US $890,000 are being allocated for enterprise-level phase-out activities and US $590,000 for technical assistance.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

182. The Secretariat raised a number of questions with UNDP regarding the national plan. These referred to certain issues concerning the additional enterprises that have applied for the 2008 TCA phase-out activities, information regarding illegal ODS production, the level of accuracy achievable by the consumption permit system with regard to the identification of users, and the exact nature and designation of TCA imports. UNDP with support from MEP provided the Secretariat with the information requested. The Secretariat had also required additional information regarding the cross-sectorial activities for regionalisation of the governments monitoring and awareness activities. UNDP has provided relevant information.

183. The Secretariat recalled that the year 2009 is the last year before phase-out, and that the present uncommitted balance is more than US $6 million. The Secretariat asked whether the full funding would be necessary, the remaining time sufficient to spend it, and if China considers the possibility of an extension of the agreement. UNDP, in its reply, pointed out that under the solvent sector plan there are still 27 month remaining to achieve its operational completion. The request for the final tranche will actually only be submitted to the last meeting of the Executive Committee in 2009. The implementation modality chosen by China is to provide only retroactive payment of conversion expenses. This requires enterprises to have achieved their phase-out and completed the related activities. Further, a post-completion verification by an independent auditing entity is carried out. Thus, disbursements have lagged significantly behind the actual achievement of phase-out. UNDP assured the Secretariat that China will monitor the level of unspent balances versus the planned activities and expenditures and take action if and when required

184. The submission of UNDP on behalf of China provided an excellent and very detailed overview of the activities under this plan, and results achieved both for the year 2007 as well as from the beginning of the plan. The implementation is progressing well, focussing on the consumption of TCA since the other two solvents covered, CTC and CFC-113, have been completely phased out in the solvent sector. The verification appears sufficient and shows that in the year 2007 China has succeeded in reducing its consumption below the maximum allowable level specified in the agreement for TCA.

RECOMMENDATION

185. The Fund Secretariat notes the submission of the 2007 progress report, and based on the information received recommends blanket approval of the 2009 annual implementation plan for the solvent sector in China and funding for the ninth tranche of the project with associated support costs at the level shown in the table below:

	Project title	Project Funding (US $)	Support Cost (US $)	Implementing Agency
(a)	ODS phase-out in China solvent sector: 2009 annual programme	1,480,000	111,000	UNDP

Annex I

SUMMARY OF ANALYSIS OF THE MDI MANUFACTURING PLANTS IN CHINA[(1)]

No *	Company Name	Products (B)	CFC 2007	Can 2007	$License**	$Capital	$Prod Validation	$Training	$Operating	$Patent*	$Other TAS*	$Total	CE ($/kg)
2	Beijing Haiderun Pharmaceutical	15, 23	540	48,306	390,000	55,000	40,000	27,500	4,367	4,354	1,842	523,063	968.64
8	Guangzhou Dongkang Pharmaceutical	15, 22	1,780	141,360	390,000	55,000	40,000	27,500	13,127	14,352	6,072	546,051	306.77
9	Guiyang Dechangxiang Pharmaceutical	24	320	20,206	195,000	55,000	40,000	27,500	1,990	2,580	1,092	323,162	1,009.88
11	Harbin Hengcang Pharmaceutical	14, 15	413	23034	390,000	55,000	40,000	27,500	2351	3,322	1,405	519,578	1,258.06
16	Heilongjiang Tianlong Pharmaceutical	15	240	16,000	195,000	55,000	40,000	27,500	1553	1,935	819	321,807	1,340.86
18	Jinan Weiming Pharmaceutical	15, 22	73,260	5,550,000	195,000	748,000	80,000	27,500	521,229	590,669	249,898	2,412,296	32.93
19	Penglai Nuokang Pharmaceutical	15, 16, 22	26,100	2,216,150	585,000	748,000	80,000	27,500	202,656	210,435	89,030	1,942,621	74.43
21	Jewim Pharmaceutical	01, 14, 15, 16	175,178	9,295,910	780,000	1,452,000	40,000	27,500	964,119	1,412,397	597,553	5,273,569	30.10
22	Shandong Lino Kefeng Pharmaceutical	15, 22	100	10,000	-	55,000	40,000	27,500	884	806	341	124,531	1,245.31
24	Shandong Lunan Beite Pharmaceutical	04, 17, 25	4,115	169,400	390,000	55,000	40,000	27,500	19,171	33,178	14,037	578,886	140.68
25	Pharmaceutical Factory of Shanxi Medical University	16	637	32,785	195,000	55,000	40,000	27,500	3,434	5,136	2,173	328,243	515.30
28	Shanghai Pharmaceutical (Group)	01, 04, 09, 12, 14, 15, 16, 22	20,656	1,289,879	1,560,000	748,000	40,000	27,500	127,440	166,542	70,460	2,739,942	132.65
32	No.1 Pharmaceutical of Wuxi Shanhe Group	15	3,200	195,560	390,000	55,000	40,000	27,500	19,440	25,800	10,916	568,656	177.71
35	Guangdong Tongde Pharmaceutical	15, 16	6,070	550,000	390,000	220,000	40,000	27,500	49,588	48,940	20,705	796,733	131.26
36	Chongqing Kerui Pharmaceutical	16	9,767	575,520	195,000	220,000	40,000	27,500	57,817	78,748	33,316	652,381	66.79
37	Zigong Chenguang Pharmaceutical	5	100	2,300	195,000	55,000	40,000	27,500	337	806	341	318,984	3,189.84
	Total production facilities		322,476	20,136,410	6,435,000	4,686,000	720,000	440,000	1,989,503	2,600,000	1,100,000	17,970,503	55.73
	MDIs not in production				880,000							880,000	
	Grand total		322,476	20,136,410	7,315,000	4,686,000	720,000	440,000	1,989,503	2,600,000	1,100,000	18,850,503	58.46

(1) In the document UNEP/OzL.Pro/ExCom/55/27 the correlation between the name of the enterprises and the products they manufactured with their corresponding levels of CFC consumption (CFC2007) and quantities manufactured (Cans 2007) was incorrect. This information has been corrected in this table.

* The request of US $2.6 million for patents and US $1.1 million for technical assistance were prorated among eligible plants based on their 2007 CFC consumption

Annex II

Phase-out through 2000-2008 ODS reduction contracts, voucher system, and retroactive reimbursement mechanisms - reproduction from the annual report presented by UNDP

			CFC-113 (ODP T)	TCA (ODP T)	CTC (ODP T)	No. of Enterprises	Funding (US$ 1,000)
2000	Contracts for future phase out	Planned	372.8	10	0	20	$5,000
		Signed	378.5	10.2	8.4	16	$4,133
	Phase out Achieved	2000 Contracts	-	-	-		
	Total 2000 phase out		**0**	**0**	**0**		
2001	Contracts for future phase out	Planned	524	10	0	20	$5,505
		Signed	541.6	10.6	0	21	$4,361
	Phase out Achieved	2000 Contracts	340.1	9.8	8.4		
		2001 Contracts	54.1	-			
	Total 2001 phase out		**394.2**	**9.8**	**8.4**		
2002	Contracts for future phase out	Planned	500	25	55	40	$5,830
		Signed	535.8	43.2	17.9	32	$4,004
	Phase out Achieved	2000 Contracts	38.4	0.4	-		
		2001 Contracts	-	-			
		2002 Contracts	291.3	41.7			
	Total 2002 phase out		**329.7**	**42.1**	-		
2003	Activities for future phase out	Planned	600	78	55	140	$5,255
		Signed	417.7	19.1	0	87	$5,105
	Phase out Achieved	2001 Contracts	331.1	7.3			
		2002 Contracts	-	-	-		
		2003 Contracts	49.3	9.8			
	Total 2003 phase out		**380.4**	**17.1**	-		
2004	Activities for future phase out	Planned	550	78	0	141	$4,000

			CFC-113 (ODP T)	TCA (ODP T)	CTC (ODP T)	No. of Enterprises	Funding (US$ 1,000)
		Signed	414.2	23.8	3.2	141	$4,156
	Phase out Achieved	2001 Contracts	156.4	3.3			
		2002 Activities	108.6	1.5	17.9		
		2003 Activities	-	-			
		2004 Activities	26.4	-	3.21		
	Total 2004 Phase Out		**291.4**	**4.8**	**21.1**		
2005	Activities for future phase out	Planned	550	85	-	20	$4,280
		Signed	156.7	0	-	20	$2,711
	Phase out Achieved	2002 Activities	126.3	-	-		
		2003 Activities	368.4	9.3	-		
		2004 Activities	303	13.6			
	Total 2005 Phase Out		**797.7**	**22.9**	**-**		
2006	Activities for future phase out	Planned	360	30	-	33	$3,340
		Signed	245	48.4	-	33	$2,532
	Phase out Achieved	2004 Activities	84.8	10.2	-		
		2005 Activities	156.7		-		
		2006 Activities	245	9.2	-		
	Total 2006 phase out		**486.5**	**19.4**	**-**		
2007	Activities for future phase out	Planned	-	**60.4**	-	13	$1,520
		signed	-	**57.586**	-	**13**	**$1,449**
	Phase out Achieved	2002 Activities	9.6	-	-		
		2006 Activities	-	13.6	-		

			CFC-113 (ODP T)	TCA (ODP T)	CTC (ODP T)	No. of Enterprises	Funding (US$ 1,000)
		2007 Activities	-	2.27	-		
	Total 2007 phase out		**9.6**	**15.83**	**-**		
2008	Activities for future phase out	**Planed**	**--**	**31.6**	**-**		**$790**
		Signed	**-**		**-**		**$790**
	Phase out achieved	**2006 activities**	**-**	**25.6**	**-**		
		2007 activities	**-**	**8.78**	**-**		
		2008 activities	**-**	**7.369***	**-**		
	Phase out Targets		3,300	537.0	110		
Nine Years Cumulative Total	Phase out Planned		3,456.8	408.0*	110	429	
	Actual Phase out signed		2,689.5	244.457*	29.5		
	Actual Phase-out achieved		**2,689.5**	**173.7***	**29.5**	**365**	

* Note: Planned and Phase out Achieved figures in 2008 are estimated quantities