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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Forty-eighth Meeting
Montreal, 3-7 April 2006

PROJECT PROPOSALS: CHINA

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

Fumigant

- Tobacco sector plan for CFC-11 phase-out: 2006 workplan — UNIDO

Process agent

- Phase out the production and consumption of CTC for process agent and other non-identified uses (Phase I): 2006 annual programme — World Bank
- Phase out the production and consumption of CTC for process agent and other non-identified uses (Phase II): 2006 annual programme — World Bank

Production

- Sector plan for CFC production phase-out: 2006 annual programme — World Bank

PROJECT EVALUATION SHEET – MULTI-YEAR PROJECTS
CHINA

PROJECT TITLE	BILATERAL/IMPLEMENTING AGENCY
Tobacco sector plan for CFC-11 phase-out: annual programme for 2006 - 2007	UNIDO

NATIONAL CO-ORDINATING AGENCY:	State Environmental Protection Administration

LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN PROJECT

A: ARTICLE-7 DATA (ODP TONNES, 2004, AS OF FEBRUARY 2006)

Annex A Group I CFCs	17,902		

B: COUNTRY PROGRAMME SECTORAL DATA (ODP TONNES, 2004, AS OF FEBRUARY 2006)

ODS	Foam	Ref.	Aerosol	ODS	Solvents	Process agent	Other
				CFC-11			463.05

CFC consumption remaining eligible for funding (ODP tonnes)	0

CURRENT YEAR DRAFT BUSINESS PLAN: Total funding US $1,613,500: phase-out: 148.6 ODP tonnes.

PROJECT DATA		2001	2002	2003	2004	2005	**2006**	2007	Total
CFC-11 (ODP tonnes)	Annual consumption limit	1,000	880	700	500	300	**150**	0	
	Annual phase-out newly addressed	90	120	180	200	200	**150**	150	
TOTAL ODS CONSUMPTION TO BE PHASED OUT									
Total ODS consumption to be phased-in (HCFCs)									
Total project funding (US $)**:**		2,000,000	2,000,000	2,000,000	1,800,000	1,700,000	**1,500,000**	0	**11,000,000**
Total support costs (US $)**:**		180,000	180,000	150,000	135,000	127,500	**112,500**		**885,000**
TOTAL COST TO MULTILATERAL FUND (US $)		2,180,000	2,180,000	2,150,000	1,935,000	1,827,500	**1,612,500**		11,885,000
Final project cost-effectiveness (US $/kg)									9.00

SECRETARIAT'S RECOMMENDATION	Approval of funding for the sixth tranche (2006) as indicated above

PROJECT DESCRIPTION

1. On behalf of the Government of China, UNIDO has submitted for consideration by the Executive Committee at its 48th Meeting, a progress report on the implementation of the 2005 work programme for the phase-out of CFC-11 in the tobacco sector (Tobacco Sector Plan), together with a request amounting to US $1.5 million for the implementation of the annual work programme for 2006 and 2007. This will represent the final payment from the Multilateral Fund for the complete phase-out of CFC-11 used for the expansion of tobacco leaves in China.

Background

2. At its 32nd Meeting, the Executive Committee approved an agreement with the Government of China for the implementation of the Tobacco Sector Plan, to phase out 1,090 ODP tonnes of CFC-11 between 2001 and 2007. At the same meeting, the Executive Committee allocated US $2 million to UNIDO for the implementation of the 2001 work programme.

3. At the 36th, 39th, 42nd and 45th Meetings, the Executive Committee has approved funding tranches for the Tobacco Sector Plan amounting to US $7.5 million.

Progress report on the implementation of the 2005 work programme

4. At the beginning of 2005, the CFC-11 consumption quota was determined for each enterprise, according to the total 2005 consumption quota for the tobacco sector and the actual production level in each enterprise. All 17 eligible tobacco expansion enterprises were requested to express their interest in phasing out their 2005 CFC-11 quota through a public bidding system. However, by March 2005 no bids had been received from any of the 17 enterprises since they preferred to receive financial support by the end of 2007, when all CFC-11 consumption in this sector would be phased out. Under these circumstances, the State Tobacco Monopoly Administration (STMA) cancelled the bidding process and decided to provide incentives to those eligible enterprises that were willing to dismantle their CFC-based expansion equipment, were located close to other enterprises that could supply them with expanded tobacco, and could afford new investments.

5. The Committee awarded the compensation scheme to the 9 enterprises that will dismantle 12 CFC-based expansion units. It was agreed that the equipment would immediately cease to operate and would be dismantled before 31 December 2005. Subsequently, in April 2005, STMA and the State Environmental Protection Administration (SEPA) reviewed the bids and selected the nine companies shown in the table below for the dismantling scheme for their CFC-11-based expansion equipment. One additional CFC-11-based unit installed after 25 July 1995 (Mianyang Cigarette Factory) was also dismantled under the supervision of the Government of China without compensation from the Multilateral Fund.

Sector Plan No.	Company name	Expansion units	Date installed
8	Guangzhou General Cigarette Factory (Shaoguan)	2	Dec 91 and Sep 94
9	Guangzhou General Cigarette Factory (Nanxiong)	1	Jun 95
14	Guangzhou General Cigarette Factory (Nanhai)	1	Mar 92
12	Hainan Hongta Cigarette Co., Ltd.	1	Sep 92
54	Yanji Cigarette Factory	1	Jan 92
36	Shijiazhuang Cigarette Factory	1	Apr 92
2	Xuchang Cigarette General Factory (Zhumadian)	1	Dec 92
57	Xiamen Cigarette Factory (Huamei)	1	Mar 95
37	Zhangjiakou Cigarette Factory	1	Jun 91
51	Nanchang Cigarette Factory	1	Oct 92
5	Zhengzhou Cigarette General Factory (Luohe)	1	Oct 94
Total		**12**	

6. As of the end of December 2005, and in accordance with CFC-11 consumption reported by the enterprises, total CFC-11 consumption in this sector was 128 ODP tonnes.

7. The following technical assistance activities were implemented in 2005 and expected to be completed in 2006:

(a) A study on the effect of different tobacco leaf material on the quality of non-CFC -11 expanded tobacco; and

(b) A study on how the CO_2 expansion technique affects the volatile chemical components of tobacco.

Annual work programme for 2006 and 2007

8. The main activity to be implemented in the 2006-2007 work programme is the issuance of new CFC-11 quotas by the Government of China to reduce CFC-11 by 300 ODP tonnes, which will result in the complete phase-out of CFC-11 used in the tobacco sector. The remaining six eligible enterprises with CFC-based expansion equipment will be invited to submit their quotas through a public bidding mechanism. Additional expansion equipment from five ineligible enterprises (i.e., established after 25 July 1995) will also be dismantled without assistance from the Multilateral Fund. Bids will be opened in April 2006.

9. In accordance with the Tobacco Sector Plan UNIDO, on behalf of the Government of China, is requesting US $1,500,000 for the implementation of the 2006-2007 work programme, plus US $112,500 agency support costs.

10. In 2007, SEPA and UNIDO will submit detailed reports describing all of the activities implemented and the results achieved during the implementation of the Tobacco Sector Plan (i.e., 2001 to 2007).

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

11. The Secretariat reviewed the progress report on the implementation of the 2005 work programme submitted by UNIDO, based on the agreement between the Government of China and the Executive Committee, and on the phase-out strategy for the tobacco sector. The Secretariat noted, through the activities implemented in 2005, that CFC-11 consumption for tobacco expansion was 172 ODP tonnes below the CFC-11 consumption level established by the Tobacco Sector Plan.

12. It is stated in UNIDO's report that representatives from the Special Working Group for the Tobacco Sector Plan, provincial Tobacco Monopoly Administration, local Environmental Protection Bureau, and local notary offices monitored and supervised the dismantling of the CFC-based expansion equipment. The procedure was fully recorded (videotapes and photographs), and local notary offices issued relevant notary deeds (all these records have been kept by the Special Working Group for the Tobacco Sector Plan).

13. For the 2006-2007 work programme, the Secretariat notes that the CFC-11 phase-out target of 300 ODP tonnes is in accordance with the agreement. According to the 2005 progress report, the remaining CFC-11 consumption in the tobacco sector is only 128 ODP tonnes, which is below the consumption proposed for 2006 (150 ODP tonnes). Under these circumstances, the Secretariat sought advice from UNIDO on the feasibility of completing the project one year earlier than the date proposed in the original Plan. UNIDO reported that the Government of China and UNIDO would make all efforts to complete the project at an earlier date, possibly by June 2007.

14. Upon a request from the Secretariat, UNIDO indicated that the tobacco companies have invested about US $120 million in the replacement of CFC-based expansion equipment with alternative non-CFC based technologies.

RECOMMENDATION

15. The Fund Secretariat recommends blanket approval of the sixth instalment of the project with associated support costs at the funding level shown in the table below, on the understanding that UNIDO will submit a progress report on the implementation of the 2006 work plan to the first meeting of the Executive Committee in 2007 and a project completion report on the entire Tobacco Sector Plan to the first meeting of the Executive Committee in 2008.

	Project Title	Project Funding (US $)	Support Cost (US $)	Implementing Agency
(a)	Tobacco sector plan for CFC-11 phase-out: annual programme for 2006 - 2007	1,500,000	112,500	UNIDO

PHASE OUT THE PRODUCTION AND CONSUMPTION OF CTC FOR PROCESS AGENT AND OTHER NON-IDENTIFIED USES (PHASE I): 2006 ANNUAL PROGRAMME AND VERIFICATION OF THE 2005 ANNUAL WORK PROGRAMME

Introduction

16. 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 of CTC for controlled uses and the consumption of CTC and CFC-113 as process agent (Phase I), and disbursed the first tranche of US $2 million at that meeting to start implementation. Subsequently at its 39th, 43rd and 46th Meetings, the Executive Committee approved the 2003 to 2005 annual programmes at funding levels of US $20 million, US $16 million and US $2 million respectively.

17. The World Bank submitted the 2006 annual programme to the 47th Meeting, with the understanding that the funding for 2006 would be released only when the verification of the results of the implementation of the 2005 annual programme was available. Consequently the Executive Committee approved the 2006 annual programme at the 47th Meeting but withheld the funds until the World Bank submitted the verification of the 2005 implementation results (decision 47/27).

18. The World Bank has submitted to this Meeting the completed verification of the production and consumption of CTC and the consumption of CFC-113 for 2005 (attached), and has requested the release of the 2006 tranche amounting to US $16 million as well as the associated support cost of US $1.2 million under Phase I of the sector plan.

19. For easy reference, phase-out targets and the associated funding levels in the CTC Agreement (Phase I) are reproduced below.

		Baseline[1/]	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
		ODP tonnes										
1.	Max allowable sum of production and imports of CTC	86,280	64,152	64,152	61,514	54,857	38,686	32,044	26,457	23,583	17,592	11,990
2.	CTC feedstock	N/A	55,319	45,400	45,333	39,306	28,446	21,276	15,129	11,662	5,042	-
3.	Max Allowable CTC consumption for other PA applications [2/]	N/A	N/A	7,389	7,832	8,302	8,800	9,328	9,888	10,481	11,110	11,997
4.	Max allowable CTC consumption in the PA applications in Appendix 2	3,825	4,347	5,049	5,049	5,049	493	493	493	493	493	220
5.	Other non identified uses	N/A	N/A	6,314	3,300	2,200	947	947	947	947	947	-
6.	Max allowable CFC-113 consumption in the PA sector	17.2	17.2	17.2	17.2	14	14	10.8	8.4	0	0	0
7.	**MULTILATERAL FUND SUPPORT (in US$ thousands)**											**Total $**
8.	MLF Funding			2,000	20,000[3/]	16,000[3/]	2,000[3/]	16,000[3/]	5,000[3/]	3,000[3/]	1,000[3/]	65,000
9.	Agency support costs			150	1,500	1,200	150	1,200	375	225	75	4,875

[1/] Baseline includes average CTC consumption over 1998-2000.
[2/] Applications in Appendix IV.
[3/] Subject to consideration of the disbursement schedule at the 39th Meeting of the Executive Committee.

20. The verification of the production and consumption of CTC and the consumption of CFC-113 in 2005 consists of three parts: verification of the production of CTC, verification of consumption of CTC and CFC-113 as process agent, and a summary of the verifications.

Verification of the CTC production in 2005

21. The production verification was carried out in February 2006 by the same team of three consultants who had carried out the verification in 2004. It consisted of two technical experts and one financial analyst. The report included a technical audit part and a financial audit part.

22. The technical audit part contained the results of the visits and investigation of 11 out of the 16 CTC producers in China. The other 5 producers had closed down and so were not visited. Table 1 of the 2005 CTC production verification report provides a list of the 16 plants with the name of the plant, the 2005 production quota allocated by SEPA, the actual 2005 production verified, and comments on the status of the plant (closed or in production).

23. The verification exercise collected from each of the plants the following information: plant identification; plant history, such as date of construction, number of CTC production lines, capacity, and baseline production for 2002 and 2001; plant production process; production quota for 2004 allocated by SEPA; daily production logs and transfer records; daily and monthly CTC inventory; and data on CTC packed for sales from daily transfer records of the product warehouse.

24. The verification team also checked the consumption of raw materials, chlorine, and organic raw materials like methane, methanol and ethylene from daily shift transfer records and the opening and closing stocks from the monthly production inventory. In addition, the team also calculated the CTC output to raw material consumption ratio and compared it with the theoretical values in order to determine whether or not the values varied within a reasonable range.

25. Since the production of chloromethane products generated a series of other products in addition to CTC, the team also collected information on the production of the co-products methyl chloride, methylene chloride, chloroform and perchloroethylene in order to reach material balance between input and output.

26. At the same time, the financial analyst of the team reviewed the reliability of the accounting system, invoices of purchases and sales records. The results of the technical audit and the financial audits were then compared for consistency, and on that basis the team drew its conclusion whether the plant was in compliance with the quota allocated by SEPA.

27. The verification report provided a summary of the verification carried out at each plant. It included the verification of: the CTC production, stocks and sales; supply and consumption of chlorine; supply and consumption of methane, methanol, and ethylene depending on the technology applied in the plant; a presentation of the results in tabular form of the production of CTC, co-produced chloromethane products, the raw material consumption and the ratios. The verification of each plant concluded with an assessment of whether the plant had met its assigned production quota for 2005 after making a comparison of results from the technical and financial audits under way in parallel. The report finally presented the findings on the CTC production level, raw material consumption and ratio, and number of operating days.

28. The verification team reported that 6 of the 11 CTC producers visited produced more than the quotas allocated by SEPA and as a result the total CTC production was 43,203 MT in 2005. However 8,586.8 MT was reported by SEPA as being used as a feedstock in the production of non-ODS chemicals and another 132.9 MT was reported as destroyed. Table 2-1 of the 2005 CTC production verification report presents a list of 23 feedstock uses of CTC in the production of non-ODS chemical in 2005, which was provided by SEPA with details on the applications, the purchase of CTC, and the CTC consumption in 2005. Table 2-2 contains a report from SEPA on CTC destruction in 2005, with information on disposal of CTC, the amount of CTC destroyed or converted and the source of the report. The verification team did not visit any of the companies which claimed to be using CTC as feedstock for non-ODS chemical production.

29. Finally, the verification concluded that China produced 37,931 ODP tonnes (34,483.2 MT) of CTC in 2005 after netting out the 8,586.8 MT for non-ODS chemical production and 132.9 MT being destroyed. The production therefore was below the target of 38,686 ODP tonnes (35,169.09 MT) as established in the Agreement with the Executive Committee.

30. The Secretariat, in accordance with the established practice of submitting documents on production verification, is not including the data part. The data, however, can be made available to any member of the Executive Committee upon request.

Verification of the consumption of CTC and CFC-113 as a process agent under Phase I in 2005

31. The verification of the consumption of CTC and CFC-113 was carried out in February 2006 by a team of two, a technical expert and a financial analyst. The team verified the consumption of CTC and CFC-113 at each of the five enterprises which were currently using CTC and CFC-113 as a process agent for the applications covered by the CTC/PA Sector Plan (Phase I). Table 1 of the CTC and CFC-113 consumption verification report provides a list of these enterprises with information on the CTC application, name of the plant, opening stock and closing stock, purchases and consumption of CTC or CFC-113 in 2005.

32. The verification began by reviewing the plant history, including date of construction, number of production lines for each CTC and/or CFC-113 application, and their capacities in the baseline year 2001 and after. It then examined as primary data the following:

- CTC and/or CFC-113 consumption quotas received from SEPA for 2005;
- CTC and/or CFC-113 purchase orders and daily movement records (from outside to plant warehouse, and from plant warehouse to workshop storage);
- CTC and/or CFC-113 stock inventory, including the amount of CTC and/or CFC-113 that remained in plant warehouse and in production system; and
- Monthly CTC or CFC-113 consumption which was calculated as: PA opening stock + PA purchase – PA closing stock

33. The team also collected as supporting data secondary information on packaging and movement records of CR, CSM and PTFE from the production line to product warehouse; dispatching and movement records of CR, CSM and PTFE out of the product warehouse for sales; weekly and monthly inventory records of CR, CSM and PTFE stocks; daily production logs and the number of operating days; and CTC/CR, CTC/CSM or CFC-113/PTFE consumption ratios.

34. The report provides a summary on each of the enterprises visited, including a description of the enterprises, the verification carried out and the results. The results contain a presentation of the opening and closing stocks, procurement of CTC and the consumption of CTC for the year. There is also an assessment of the actual production of the final product of the plant obtained by examining the production and movement of the inventory. The CTC purchased by the plant was treated as part of the national consumption in 2005 and was compared to the quota issued by SEPA.

35. It was confirmed by the verification that the verified 2005 CTC and CFC-113 purchases in the PA Sector (Phase I) were as follows:

- **CTC purchase and consumption*:*** The verified CTC purchase and consumption in 2005 was 485.02 ODP tonnes and 1,394.65 ODP tonnes respectively, of which 909.63 ODP tonnes CTC was consumed from the 2004 stockpile while the 485.02 ODP tonnes of CTC purchase was below the 2005 maximum allowable CTC consumption (493.00 ODP tonnes) in the PA sector.

- **CFC-113 purchase and consumption*:*** The verified CFC-113 purchase and consumption in 2005 was 3.20 ODP tonnes and 3.20 ODP tonnes respectively, which was below the 2005 maximum allowable CFC-113 consumption (14.00 ODP tonnes) in the PA Sector.

36. The verification also notes that, in 2005, the trial production and equipment modification of new CSM line established in Jilin Chemical (December 2004) had been unsuccessful and CTC consumption ratios still remained high.

Summary of the verification reports

37. The summary of the verification provides an overview of the production and consumption of CTC and the consumption of CFC-113 against the targets set in the Agreement approved at the 38th Meeting. It also provides an assessment of the verification results against the requirements of the Montreal Protocol on the relevant substances. It includes a section on the CTC production verification, a section on CTC use as a feedstock by CFC producers, a section on CTC consumption as a feedstock for non-ODS chemical production, a section on CTC use as a process agent for the applications covered by the sector plan (Phase I), CTC import and export, and finally an overall assessment of the CTC production and CTC consumption in China for 2005 using the Montreal Protocol definitions of production and consumption. For easy reference, five of the summary tables of the 2005 summary verification report for the CTC/PA Sector plan (Phase I) are reproduced below, Tables 1, 2, 6, 7 and 8.

38. Table 1 presents an assessment of the 2005 CTC production, CTC consumption and CFC-113 consumption as process agents in China against the 4 criteria established in the Agreement under Phase I of the sector plan.

Table 1: CTC production and consumption in ODP tonnes

Year	CTC production* (Row 1 of the agreement)		Use of CTC for CFC feedstock consumption (Row 2 of the agreement		Use of CTC for the 25 PA applications (Row 4 of the agreement)		Use of CFC-113 for 25 PA applications (Row 5 of the agreement)	
	Allowed	Verified	Allowed	Verified	Allowed	Verified	Allowed	Verified
Base	86,280	N/A	N/A	N/A	3,825	N/A	17.2	N/A
2001	64,152	N/A	55,139	NA	4,347	N/A	17.2	N/A
2002	64,152	N/A	45,400	NA	5,049	N/A	17.2	N/A
2003	61,514	59,860	45,333	39,839	5,049	3,080	17.2	17.1
2004	54,857	50,195	39,306	34,168	5,049	3,886	14	10.8
2005	**38,686**	**33,080**	**28,446**	**25,811.3**	**493**	**485.02**	**14**	**3.2**
2006	32,044		21,276		493		10.8	
2007	26,457		15,129		493		8.4	
2008	23,583		11,662		493		0	
2009	17,592		5,042		493		0	
2010	11,990		0		220		0	

39. Table 2 provides an assessment of the actual verified CTC production against allowable quota and target by company and by national aggregate. It also includes the CTC used as feedstock for non-ODS chemicals production and CTC destroyed as reported by SEPA; and the calculation of the CTC production that would be measured against the Agreement target.

40. SEPA reported as having included the companies and users of CTC for non-ODS feedstock applications in the overall CTC verification and claimed a total of 14,296.84 ODP tonnes being consumed as feedstock for such purposes in 2005. This amount was reported to include some newly identified PA applications listed but not yet confirmed by TEAP. Consistent with the provisions of the Montreal Protocol, the CTC production total was reduced by 14,296.84 ODP tonnes for non-ODS feedstock applications.

41. SEPA also noted that more feedstock applications and companies might be identified and confirmed through the work presently being undertaken by SEPA for the implementation of the CTC/PA Sector Plan (Phases I and II). As the list of companies and their production is commercially sensitive, the list has not been included here but is available to the Secretariat for internal review if so requested.

Table 2: Summary of quotas issued by SEPA and actual verified CTC production in 2005

Name of CTC producer		2005 CTC Production Quota (MT)	2005 CTC Production (MT)	Comments
CTC 1	Luzhou North Chemical Co. , Ltd.	2,106.00	2,098.63	
CTC 2	Zhejiang Juhua Fluoro-chemical Co., Ltd.	13,604.00	14,951.88	
CTC 3	Liaoning Panjing No. 3 Chemical Plant	0	0	Plant Closed.
CTC 4	Chongqing Tianxuan Chemical Co., Ltd.	0	0	Plant Closed Dec. 26, 2003
CTC 6	Chongqing Tianyuan Chemical General Plant	0	0	Plant Closed April 16, 2004.
CTC 7	Taiyuan Chemical Industrial Co., Ltd.	0	0	Plant Closed
CTC 8	Luzhou Xinfu Chemical Industry Co., Ltd.	717.00	705.54	Plant Closed
CTC 9	Jiangsu Meilan Chemical Co., Ltd.	2,303.00	4,320.08	One production line put into operation in 2005 to convert CTC into CM1.
CTC 10	Guangzhou Hoton Chemical (Group) Co., Ltd.	0	0	Plant closed
CTC 11	Sichuan Honghe Fine Chemical Co., Ltd.	5,668.00	5,767.154	
CTC 12	Shanghai Chlor-Alkali	6,609.00	7,211.10	
CTC 14	Wuxi Greenapple Chemical Co., Ltd.	1,000.00	999.74	
CTC 15	Shandong Jinling Group Co., Ltd.	1,100.00	4,198.12	Two new CMs line put into production in 2005.
CTC 16	Shandong Dongyue Fluoro-Silicon Material Co., Ltd.	1,461.00	2,350.20	
CTC 5	Chongqing Tiansheng Chemical Co., Ltd.	5.00	5.00	CTC residue distillation plant
CTC 13	Quzhou Jiuzhou Chemical Co., Ltd.	596.00	595.56	CTC residue distillation plant
Gross 2005 CTC production in China		**35,169.00 MT**	**43,203.00 MT (47,523.30 ODP tonnes)**	
Used as feedstock for non-ODS chemicals			12,997.13 MT (14,296.84 ODP tonnes)	SEPA reported
Destroyed by incineration			132.99 MT (146.29 ODP tonnes)	SEPA reported
2005 CTC Production as per the Agreement			**30,072.88 MT (33,080.17 ODP tonnes)**	Gross production – non-ODS feedstock uses – destroyed amount
Agreement Limit on 2005 CTC Production in China			**38,686.00 ODP tonnes**	

42. Table 6 contains an assessment of the CTC production in accordance with the Montreal Protocol definition, using the results of the verification.

Table 6: National CTC production

CTC Production	(ODP tonnes)
Gross CTC production in 2005	**47,523.30**
CTC used as feedstock for non-ODS chemicals	-14,296.84
CTC destroyed by technologies approved by the Parties	-146.29
CTC production as per the Agreement in 2005	**33,080.17**
Used as feedstock for CFC production	-25,811.30
National CTC production as per the Montreal Protocol	**7,268.87**

43. Table 7 contains an assessment of the CTC consumption according to the Montreal Protocol definition and the control schedule.

Table 7: National CTC consumption

CTC Production and Consumption	(ODP tonnes)	MP Baseline
CTC production as per the Montreal Protocol	7,268.87	29,367.4
Import of CTC	0	
Export of CTC	5.23	
CTC consumption as per the Montreal Protocol	7,263.64	55,903.8

44. Finally Table 8 provides an assessment of China's position in 2005 regarding CTC production and consumption under the Montreal Protocol requirement.

Table 8: Montreal Protocol Requirement and National Production and Consumption.

	Production (ODP tonnes)	Consumption (ODP tonnes)
Montreal Protocol Baseline	29,367.4	55,903.8
Montreal Protocol limit in 2005 (85% of baseline)	7,341.85*	8,385.57
Actual CTC production and consumption in 2005	7,268.87	7,263.64

* The allowed CTC production for consumption include the additional production of 10% of base level allowed for basic domestic need from 2005 to 2009 and 15% from 2010.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

Verification of the 2005 production and consumption of CTC and the consumption of CFC-113

45. The verification was carried out in accordance with the verification framework which the World Bank developed for carrying out verifications of CTC phase out sector plans for China and India and which was noted by the Executive Committee. The summary of the verification was particularly useful in providing an overview of the implementation of the CTC sector plan (Phase I) which included an assessment of both CTC production and consumption, and CFC-113 consumption against the targets set in the Agreement, and also an assessment of the potential of China to comply with the Montreal Protocol.

46. The overall assessment of the verification confirmed that China produced a total of 47,523.3 ODP tonnes of CTC of which China claimed 14,296 ODP tonnes were used as feedstock for non-ODS chemicals production and another 146.24 ODP tonnes were destroyed. However the CTC production part of the verification concluded that SEPA reported a total of 9,445.48 ODP tonnes of CTC being used as feedstock for non-ODS chemical production and provided a list of these applications. There was no change with regard to the CTC claimed to be destroyed. As a result, the total volume of CTC being used as feedstock for non-ODS chemicals production and being destroyed would be 9,591.72 ODP tonnes, instead of 14,442 ODP tonnes as reported under the overall assessment part of the verification. There is a difference of approximately 4,800 ODP tonnes in the reported amount of CTC production being used as feedstock for non-ODS chemicals.

47. This discrepancy has implications on the standing of China in achieving the targets in the Agreement and the requirement under the Montreal Protocol. If the 14,442 ODP tonnes as reported in the overall assessment were used, the total CTC production for controlled uses and CFC feedstock would come down to 33,081 ODP tonnes (47,523.3-14,442) which is below the maximum CTC production target of 38,686 ODP tonnes as provided for in the Agreement for 2005. By further deducting from 33,081 ODP tonnes 25,811.3 ODP tonnes, the amount confirmed by the CFC production verification as CTC used as feedstock for CFC production, the remaining 7,270 ODP tonnes would place China below the Montreal Protocol compliance target calculated at 7,341 ODP tonnes.

48. However if 9,591 ODP tonnes as reported in the CTC production verification part were used, the total CTC for controlled uses and CFC feedstock would be 37,931 ODP tonnes (47,523.3-9591.72) and would enable China to stay within the CTC maximum production target of 38,686 ODP tonnes as set in the Agreement. However by further deducting from 37,931 ODP tonnes 25,811.3 ODP tonnes, the amount confirmed by the CFC production verification as CTC used as feedstock for CFC production, the remaining 12,120 ODP tonnes would place China above the Montreal Protocol compliance target calculated at 7,341 ODP tonnes.

49. As seen from the analysis above, the data discrepancy over the CTC production which was reported to be for feedstock use to produce non-ODS chemicals would not affect China's standing with regard to the target in the Agreement, however it could put into question its compliance status under the Montreal Protocol. The verification team from the World Bank could not clarify the situation because it did not visit any of the companies where these applications for non-ODS chemicals took place.

50. The data on the CTC production being used as feedstock for non-ODS chemicals was provided by SEPA. In the case of the CTC production verification there is a list from SEPA of these feedstock applications, with details on type, the purchase of CTC, and the CTC consumption in 2005. The overall assessment part does not provide any details, citing commercial confidentiality as the reason, but committed to providing information to the Secretariat for internal review. The Secretariat requested this information but has not received it yet.

51. It is true that decision 44/29 clarified that the Agreement for Phase I in China should not include CTC production for use as feedstock for non-ODS chemicals. However the same decision also required China to verify such uses and report them to the Ozone Secretariat under Article 7 of the Montreal Protocol. SEPA claimed to have included such uses in the overall verification. Since the independent verification team of the World Bank did not cover any of the applications, it would be important to know the procedure and the organization that was employed for the verification by SEPA. It would be also important to know whether the verification used the definition of feedstock as defined by the Montreal Protocol and the results of such verification.

52. Under the policy of the Montreal Protocol, the determination of feedstock applications of CTC falls within the responsibility of the national governments. However when there was a discrepancy of several thousand ODP tonnes that could impact on the standing of a country in regard to its compliance under the Montreal Protocol, would there be a responsibility for the independent verification by the World Bank to include these enterprises in its field audit, even on a selective basis.

53. On another issue, it was confirmed by the CTC consumption verification that in 2005, the trial production and equipment modification of new CSM line established in Jilin Chemical (December 2004) had been unsuccessful and CTC consumption ratios still remained high. Since the project was intended to reduce the emission level eventually to 220 ODP tonnes in 2010 under Phase I of the sector plan, what would be the next step to achieve the emission target if this project could not achieve it.

54. Following the practice of submitting similar verification reports of the production sector, the Secretariat is not submitting the data part of the verification, but would make this available to members of the Executive Committee upon request.

55. The Secretariat communicated these questions to the World Bank for clarification but had not received a reply at the time of writing.

RECOMMENDATION

56. Pending.

PHASE OUT THE PRODUCTION AND CONSUMPTION OF CTC FOR PROCESS AGENT AND OTHER NON-IDENTIFIED USES (PHASE II): 2006 ANNUAL PROGRAMME

PROJECT DESCRIPTION

Background

57. At its 47th Meeting in 2005, the Executive Committee approved, in principle, the sector plan for the phase-out of ODS process agent applications and corresponding CTC production 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 Meeting disbursed US $15 million plus support costs of US $1.125 million to the World Bank for the first tranche of the project and expected the Secretariat and the World Bank to work out the subsequent tranches to be included in the draft agreement for submission to the 48th Meeting. The Committee also requested the World Bank to submit a final draft agreement for the project to the 48th Meeting, together with an annual implementation plan for 2006 (decision 47/54).

58. The World Bank has submitted the 2006 annual programme on behalf of the Government of China for the sector plan for the phase-out of ODS process agent applications and corresponding CTC production in China. The phase-out targets for both Phase I and Phase II (Phase II) of the sector plan for 2006 are combined and presented below, noting that the 2006 annual work programme for Phase I was approved at the 47th Meeting, with funding withheld pending the submission of the verification of the 2005 work programme (decision 47/27). The verification of Phase I of the sector plan is also submitted to this Meeting.

59. The World Bank has also submitted the draft agreement for Phase II of the sector plan and is requesting another US $10 million for the 2006 work programme with US $750,000 in support cost. The 2006 annual work programme and the draft agreement are attached.

2006 annual work programme

60. The programme proposes that the overall phase-out targets of the 2006 annual work programme for Phase II require China to ensure that its CTC consumption for process agents does not exceed 7,892 ODP tonnes, and production 29,661ODP tonnes for controlled uses and as feedstock for CFC production.

61. The annual work programme proposes activities to be undertaken to achieve these targets and they cover policy level, enterprises-level and technical assistance activities. Most of the activities are already being implemented under Phase I of the sector plan and are being reinforced and strengthened to cover the Phase II.

62. Under the policy section, the Government plans to reinforce CTC production quota systems and CTC consumption quota systems for the PA sector, and strengthen the CTC sales registering system. In addition the **"**Complimentary Circular on Strict Control of New Construction or Capacity Expansion of CTC Consumption Production Line" will be promulgated in 2006. The circular will ban new construction and capacity expansion of all production lines that use CTC as a process agent. The circular aims to curb the rapid development of consumption of CTC for new potential process agent applications, which have not yet been reviewed and

approved by the Party. This will also facilitate phase-out of CTC used in potential new process agent applications.

63. At the enterprise-level, five types of activities will be implemented, including production quotas for CTC producers and emission controls, conversions, closures of PA enterprises, and signing agreements with enterprises on permanent cessation of use of CTC for some production lines related to 13 PA applications. All these activities will be based on assignment of quotas. While most of these are an extension of existing activities under Phase I, the last activity is new. Some of the enterprises that are using CTC in 13 of the applications do not want to dismantle the multifunctional production line but to commit to ceasing the production of the CTC related product and only use the production line for the production of other products using ODS-free technology. They will be asked to sign an agreement to permanently cease the use of CTC as a process agent for the CTC related product.

64. Under the technical assistance (TA) programme, apart from the extension of the Management Information System (MIS) to include ODS, training of personnel involved in implementation of phase-out activities, the following new activities will be implemented in 2006:

- Domestic investigation of new PA consumers other than Phase I and Phase II: As the Chinese Government promised to provide a detailed report of new PA applications in China by the end of 2006, and promised to phase-out new PA applications once the Parties listed them as PA, it's very important and urgent for China to identify clearly all the PA consumers other than those included in Phase I and Phase II as soon as possible. A consultant will be selected early in 2006 to carry out the investigation, which will cover the conditions of production, the production process, capacity, CTC consumption, enterprise knowledge of possible substitute technologies, etc. The investigation will assist China in controlling future phase-out of new PAs.

- Study of CTC consumption and emissions in production of chlorinated polypropylene (CP)/chlorinated ethylene-vinyl acetate (CEVA): China requested 994 ODP tonnes in CTC consumption in the Phase II sector plan in 2010. However, the 994 relates to CTC emissions. As the Parties have not defined the levels of emissions of ODS from PA for Article 5 countries, it is not clear whether to maintain the 994 ODP tonnes of CTC in 2010 is feasible and will be accepted by the Parties. Therefore, the Chinese Government feels it essential to study the details of CTC consumption and emissions in CPP/CEVA production.

65. The submission has two annexes: one provides a list of CTC producers and their status, and the other contains information on PA enterprises under Phase II.

Draft Agreement

66. The approval of the Phase II sector plan at the 47th Meeting contains a number of provisos, which are expected to be included in the draft agreement. These provisos which form part of decision 47/54 include, among other things:

"(a) That approval was without prejudice to determination by the Parties of maximum residual levels of emissions for process agent applications by Article 5 Parties;

(b) That China would reduce the residual emissions from the process agent applications for production of CP and CEVA addressed in the Phase II CTC sector plans to levels that might be agreed in future by the Parties, without requesting additional assistance from the Multilateral Fund;

(c) That the issue of the reduction of residue emissions from process agent applications from the production of chlorosulphonated polyoefin (CSM) addressed in the Phase I CTC sector plan should be considered in finalizing the agreement of the Phase II sector plan;

(d) If, during implementation of the Phase II CTC sector plan, or at any time thereafter, China discovered applications, tonnes of CTC and/or uses (including new process agent categories) of CTC not otherwise explicitly covered in the Phase II CTC phase-out sector plan, China committed to phase them out in a manner consistent with the phase-out schedule included in the agreement (to be submitted to the 48th Meeting) at no additional cost to the Multilateral Fund."

67. The draft agreement proposed by the World Bank is presented in the standard format for multi-year agreements of the Multilateral Fund and does not address the above elements.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

68. The Secretariat communicated to the World Bank comments on the proposed 2006 annual work programme and the draft Agreement and has not received a reply at the time of writing. These comments are summerized below.

Draft Agreement

69. The Secretariat noted that it is probably useful for future monitoring to combine the key targets from Phase I and Phase II. Therefore, we suggest some changes in Appendix 2-A towards that goal, but asked the Bank to check the other parts of the draft agreement for consistency.

70. The Secretariat noted that in Appendix 2-A, according to A7 data, the baseline for CTC consumption in row 2 should be 55,891 instead of 55,900. Therefore, the maximum allowable CTC consumption as per the Montreal Protocol control measures should be 8,383.65 instead of 8,385 for the years 2006-2009.

71. The Action Plan provided as Chapter 7 of the project document submitted to the 47th Meeting, on which basis the project was approved, indicated an annual control target for Phase II in 2006 to 2009 of 6,945 ODP tonnes. The table in the proposed 2006 AIP indicates a target of 7,892 ODP tonnes. The Bank was therefore asked to amend the target to correspond with the project as approved-in-principle. Similarly the Action Plan indicates an on-going limit of 947 ODP tonnes for "Other non-identified uses". This also forms part of the approval in

principle and should be reflected in the table in the 2006 AIP, in place of the 'not applicable' and 'TBD' entries.

72. The Secretariat set out the proposed changes in the table below and asked the World Bank to check the other parts of the draft agreement for consistency.

	Baseline (2003)	2006	2007	2008	2009	2010
1. Max allowed CTC production for consumption under the MP	29,367	7,342	7,342	7,342	7,342	4,405
2. Max allowable CTC consumption as per the Montreal Protocol control measures	55,891	8,383.65	8,383.65	8,383.65	8,383.65	0
3. Max allowable CTC production as CFC feedstock use		21,276	11,396	847	847	0
4. Max allowable CTC consumption for controlled uses						
4.1. Target from Phase I	5,049	493	493	493	493	220*
4.2. Target from Phase II	5,411	6,945	6,945	6,945	6,945	994*
TOTAL TARGETS	10,460	7,438	7,438	7,438	7,438	1,214*
5. Potential new Process Agent Applications	3,300	947	947	947	947	0
6. Max allowable CFC-113 consumption in the PA sector	17.2	10.8	8.4	0	0	0
7. Multilateral Fund funding (in US$ thousands)						**TOTAL**
7.1 MLF Funding for Phase I						
7.2. MLF Funding for Phase II		25,000	10,000	10,000	1,500	46,500
TOTAL FUNDING						
8. Agency support costs (in US$ thousands)						**TOTAL**
8.1 Agency support costs (Phase I)						
8.2 Agency support costs (Phase II)						
TOTAL SUPPORT COSTS						

Note: *Provided emissions are accepted by the Parties as eligible, under decision X/14.

73. The Bank was advised that consistent with decision 47/54, paragraph 2 in the agreement needs to be amended to contain language to the effect that: "China undertakes to comply with any CTC emission limits for Article 5 countries that may be established by the Parties without further requests for funding from the Multilateral Fund." It should also contain the associated commitment that: "the Agreement is entered into without prejudice to the establishment of such limits by the Parties."

74. Further the Bank was requested to amend paragraph 7 in the agreement (the "flexibility" paragraph) to reflect the language of decision 46/37, noting that this will increase the level of flexibility compared to the text in the existing paragraph 7.

75. The above and some other necessary amendments have been included in a "track changes" version of the agreement provided electronically to the World Bank. The amended paragraphs are presented below.

- "The Country will reduce the residual emissions from the process agent applications for the production of chlorosulphonated polyethylene (CSM) in Phase I CTC sector plan and chlorinated polypropylene (CP) and chlorinated ethylene-vinyl acetate (CEVA) addressed in the Phase II CTC sector plan to levels that might be agreed in future by the Parties without requesting additional assistance from the Multilateral Fund and the Agreement is entered into without prejudice to the determination by the Parties of maximum residual levels of emissions for process agent applications by Article 5 Parties.

- If, during implementation of the Phase II CTC sector plan, or at any time thereafter, China discovers applications, tonnes of CTC and/or uses (including new process agent categories) of CTC not otherwise explicitly covered in the Phase II CTC phase-out sector plan, China commits to phase them out in a manner consistent with the phase-out schedule included in this Agreement at no additional cost to the Multilateral Fund

- While the funding was determined on the basis of estimates of the needs of the country to carry out its obligations under this agreement, the Executive Committee agrees that the country may have the flexibility to reallocate the approved funds, or part of the funds, according to the evolving circumstances to achieve the goals prescribed under this agreement. Reallocations categorized as major changes must be documented in advance in the next annual implementation programme and endorsed by the Executive Committee as described in sub-para. 5 (d). Reallocations not categorized as major changes may be incorporated in the approved annual implementation programme, under implementation at the time, and reported to the Executive Committee in the report on implementation of the annual programme."

2006 annual work programme

76. The targets for the 2006 annual work programme should be revised to be consistent with the proposed changes to the draft agreement as discussed above. They should cover both phases and be presented in the following format.

Targets and Funding of the 2006 Annual Programme
(Phase I and Phase II combined)

Max. allowable consumption	
CTC for 25 PA application (Phase I)	
2006	493 ODP tonnes
CTC for 31 PA application (Phase II)	
2006	6,945ODP tonnes
Total	7,438 ODP tonnes
Max. allowable consumption of CFC-113 for process agent	
2006	10.8 ODP tonnes
Max. allowable production	
CTC	
Feedstock for CFC	21,276ODP tonnes
Controlled uses	7,342 ODP tonnes
Total	28,618 ODP tonnes
2006 tranche (Phase I)	US $16 million
2006 tranche (Phase II)*	US $25 million
Total	US $41 million

*Including US $15 million disbursed at 47th Meeting.

77. The level of funding requested in the data sheet of annual programme should be corrected to US $10 million instead of US $15 million since the total funding tranche of 2006 should be US $25 million, including the $15 million already disbursed at the 47th Meeting.

RECOMMENDATION

78. Pending.

SECTOR PLAN FOR CFC PRODUCTION PHASE-OUT: 2006 ANNUAL PROGRAMME AND 2005 VERIFICATION REPORT

PROJECT DESCRIPTION

79. According to the arrangement under the Agreement for the China CFC production sector plan, the World Bank submitted the 2006 annual programme for the CFC production sector phase-out in China to the 47th Meeting in November 2005. The Executive Committee decided "to approve the 2006 work programme of the China CFC production closure programme, noting that the request for funding and support cost would be submitted to the 48th Meeting by the World Bank, with a verification report on the implementation of the 2005 annual programme" (decision 47/28).

80. As requested, the World Bank is submitting to the 48th Meeting the verification report on the implementation of the 2005 China CFC production phase-out programme (attached without the data part), which contains the verification of the 6 remaining CFC plants (from the original 36) that were producing under the quota system in the 2005 annual programme (identified by the SRIC audit report numbers as A8, A10, B11, B8, B12, and B14).

81. The verification was conducted by a team of three in February 2006 headed by Mr. Vogelsberg, a consultant who had been carrying out verifications of the CFC plants in China on behalf of the World Bank for the past 6 years. The report contains a summary of conclusions and 3 annexes. The summary of the conclusions provides the overall assessment of the verification team on the performance of 2005 work programme in achieving the targets set in the Agreement and the aggregate data on the total CFC production, the breakdown into the different substances of CFC-11, CFC-12, CFC-113, CFC-114, CFC-115, CFC-13, and the overall consumption of feedstock. The overall assessment of the verification concludes that China complied with the annual CFC production target set out in the Agreement for the year 2005, with the total actual production of CFCs at 18,720.48 ODP tonnes against the 18,750 ODP tonnes set in the Agreement.

82. Annex I contains a description on a plant-by-plant basis of the verification process and a discussion of the findings. It starts with an observation of the changes that may or may not have been introduced to the plant since the last visit of the team and continues with an assessment on the quality of record-keeping in the plant. It describes the types of records that were used to conduct the verification and the relevance of these records to the verification exercise. The team followed the production process and checked the paper trail on the movement of the raw materials CTC and HF to the CFC production units, the transfer of finished products from the day tank to the packaging area and then the transfer of the packaged product in containers to the sales warehouse. This process involved the collection and tabulation of the daily, monthly and yearly data. There was a cross check using the data from the financial audit which proceeded simultaneously. The document contained a discussion of the issues that the verification team identified during the visit. The conclusion of the verification of each plant consists of an assessment of the compliance of the company with the production quota assigned by SEPA.

83. There was no complete closure in 2005, and the 6 plants which had been producing in 2004 continued their production during 2005 but at a lower level under the control of mandatory quotas.

84. Annex II presents the findings in the format approved by the Executive Committee and covers data by month on production capacity, product mix, production quota and actual CFC production, feedstock consumption ratio and inventory changes in feedstock, and the number of days in production. Comparative data on these parameters since the beginning of the phase-out programme has been provided to facilitate a check on consistency.

85. Annex III contains the financial audit results presented by the financial specialist in the verification team. The focus of the audit is the verification of CFC production obtained from the examination of financial records such as on the procurement, consumption of raw materials and sales. The report provides the audited results of CTC and HF consumption and CFC production plant by plant.

SECRETARIAT'S COMMENTS AND RECOMMENDATION

COMMENTS

Overall assessment of the 2005 verification in light of the guidelines for verification of ODS production phase-out

86. The verification of the implementation of the 2005 work programme was carried out by the same team which had been conducting the same exercise for the past several years. The exercise was carried out in accordance with the guidelines and methodology approved by the Executive Committee. The results of the verification are presented in line with the approved formats, and are supported by adequate documentation which enables tracking and validation of CFC production, and the consumption of feedstock of HF and CTC.

Compliance with the Montreal Protocol control schedule for CFC-13

87. It has been confirmed by the verification team that China's production of CFC-13 in 2005 was 20.292 ODP tonnes, which is below the annual quota assigned by SEPA of 20.35 ODP tonnes and is under the 21.3 ODP tonnes of maximum allowable production under the Montreal Protocol control schedule for CFC-13 production.

88. The Secretariat, in accordance with previous practice of furnishing information to the Executive Committee on verification of ODS production phase-out, is not including in the submission the data part in Annex II of the verification report. The data can, however, be made available to any member of the Committee upon request.

RECOMMENDATION

89. The Secretariat recommends that, in light of satisfactory verification that China has achieved the CFC production reduction target as established in the CFC production sector agreement for the year 2005, the Executive Committee releases to the World Bank US $13 million for the implementation of the 2006 work programme of the China CFC production sector agreement, as well as US $975,000 as support cost for the World Bank.

2005 SUMMARY VERIFICATION REPORT

FOR

THE CTC/PA SECTOR PLAN: PHASE I

WORLD BANK

WASHINGTON, D.C., USA

FEBRUARY 2006

1. Introduction

As required by the agreement between China and the Executive Committee of the Multilateral Fund for Phase I of the CTC/PA Sector Plan, China's annual production and consumption of CTC and consumption of CFC-113 must be verified independently by the World Bank. This report provides a summary of the verification of the 2005 production/consumption of these ozone depleting substances, including consumption in the 25 process agent applications covered by the agreement.

Consistent with the requirements, the World Bank appointed independent verification teams for the CTC production verification and for the verification of consumption of the PA companies covered by the Agreement. The CTC verification team consisted of two international technical experts and one local financial expert from China. The PA verification team consisted of one international technical expert. The guidelines for CTC production verification and PA consumption verification followed those in 2004 verification. The CTC Production Verification Report and the PA Consumption Verification Report have been submitted separately.

2. Conclusion

The two teams were able to verify that overall production of CTC and consumption of CTC and CFC-113 were within the limits set by the agreement between China and the ExCom. Details appear in Table 1 below.

Table 1: CTC production and consumption in ODP tonnes

Year	CTC production* (Row 1 of the agreement)		Use of CTC for CFC feedstock consumption (Row 2 of the agreement		Use of CTC for the 25 PA applications (Row 4 of the agreement)		Use of CFC-113 for 25 PA applications (Row 5 of the agreement)	
	Allowed	Verified	Allowed	Verified	Allowed	Verified	Allowed	Verified
Base	86,280	N/A	N/A	N/A	3,825	N/A	17.2	N/A
2001	64,152	N/A	55,139	NA	4,347	N/A	17.2	N/A
2002	64,152	N/A	45,400	NA	5,049	N/A	17.2	N/A
2003	61,514	59,860	45,333	39,839	5,049	3,080	17.2	17.1
2004	54,857	50,195	39,306	34,168	5,049	3,886	14	10.8
2005	**38,686**	**33,080.17**	**28,446**	**25,811.30**	**493**	**485.02**	**14**	**3.2**
2006	32,044		21,276		493		10.8	
2007	26,457		15,129		493		8.4	
2008	23,583		11,662		493		0	
2009	17,592		5,042		493		0	
2010	11,990		0		220		0	

3. CTC production verification

The verification team audited each of the 9 CTC producers presently producing CTC in China and the two CTC distillation plants. CTC production in 2005 was confirmed as **33,080.17 ODP tonnes**. The detailed production and raw material figures are reported in the Annexes to the CTC Production Verification Report.

SEPA reported that a total of 14,296.84 ODP tonnes CTC was consumed as feedstock for non-ODS chemicals. Consumption by newly identified process agent applications included in the tentative list of PA adopted by the Parties at its 17th meeting.is teated as feedstock until confirmed at the 19th meeting. 146.29 ODP tonnes CTC was destroyed by incineration in 2005. Complying with provisions of the Montreal Protocol, the gross 2005 CTC production was therefore reduced by (14,296.84 + 146.29) ODP tonnes. The 2005 CTC production as per the Agreement was confirmed as 33,080.17 ODP tonnes.

Table 2: Summary of quotas issued by SEPA and actual verified CTC production in 2005

Name of CTC producer		2005 CTC Production Quota (MT)	2005 CTC Production (MT)	Comments
CTC 1	Luzhou North Chemical Co. , Ltd.	2,106.00	2,098.63	
CTC 2	Zhejiang Juhua Fluoro-chemical Co., Ltd.	13,604.00	14,951.88	
CTC 3	Liaoning Panjing No. 3 Chemical Plant	0	0	Plant Closed.
CTC 4	Chongqing Tianxuan Chemical Co., Ltd.	0	0	Plant Closed Dec. 26, 2003
CTC 6	Chongqing Tianyuan Chemical General Plant	0	0	Plant Closed April 16, 2004.
CTC 7	Taiyuan Chemical Industrial Co., Ltd.	0	0	Plant Closed
CTC 8	Luzhou Xinfu Chemical Industry Co., Ltd.	717.00	705.54	Plant Closed
CTC 9	Jiangsu Meilan Chemical Co., Ltd.	2,303.00	4,320.08	One production line put into operation in 2005 to convert CTC into CM1.
CTC 10	Guangzhou Hoton Chemical (Group) Co., Ltd.	0	0	Plant closed
CTC 11	Sichuan Honghe Fine Chemical Co., Ltd.	5,668.00	5,767.154	
CTC 12	Shanghai Chlor-Alkali	6,609.00	7,211.10	
CTC 14	Wuxi Greenapple Chemical Co., Ltd.	1,000.00	999.74	
CTC 15	Shandong Jinling Group Co., Ltd.	1,100.00	4,198.12	Two new CMs line put into production in 2005.
CTC 16	Shandong Dongyue Fluoro-Silicon Material Co., Ltd.	1,461.00	2,350.20	
CTC 5	Chongqing Tiansheng Chemical Co., Ltd.	5.00	5.00	CTC residue distillation plant
CTC 13	Quzhou Jiuzhou Chemical Co., Ltd.	596.00	595.56	CTC residue distillation plant

Gross 2005 CTC production in China	**35,169.00 MT**	**43,203.00 MT (47,523.30 ODP tonnes)**	
Used as feedstock for non-ODS chemicals		12,997.13 MT (14,296.84 ODP tonnes)	SEPA reported
Destroyed by incineration		132.99 MT (146.29 ODP tonnes)	SEPA reported
2005 CTC Production as per the Agreement		**30,072.88 MT (33,080.17 ODP tonnes)**	Gross production – non-ODS feedstock uses – destroyed amount
Agreement Limit on 2005 CTC Production in China		**38,686.00 ODP tonnes**	

4. CTC used by CFC producers

The CTC used by the CFC producers was verified as part of the CFC verification. The CFC verification report was submitted to the 48th meeting of the ExCom for consideration.

Table 3: 2005 CTC consumed by CFC producers

	CTC consumption (in MT)
Jiangsu Meilan Chemical Co., Ltd.	1,745.43
Zhejiang Juhua Fluorochemical Co., Ltd.	9,475.38
Zhejiang Dongyang Chemical Plant	1,267.93
Jiangsu Changsu 3F Refrigerant Co. LTD	10,976.08
Total in MT	23,464.82
Total in ODP tones	25,811.30

5. Companies using CTC for non-ODS production

China has a number of non-ODS feedstock users. In order to allow monitoring of the total production as defined by the MP, the companies and users of CTC for non-ODS feedstock applications have been included in the overall CTC verification. The total consumption of CTC for non-ODS production is found and confirmed by SEPA 14,296.84 ODP tonnes. This amount includes some newly identified PA applications listed but not yet confirmed by TEAP. Consistent with the provisions of the Montreal Protocol, the CTC production total are therefore reduced by 14,296.84 ODP tons for non-ODS feedstock applications.

More feedstock applications and companies might be identified and confirmed through the work presently undertaken by SEPA for the implementation of the CTC/PA Sector Plan (Phase I and II). As the list of companies and their production is commercially sensitive, the list is not included here but is available to the Secretariat for internal review if so requested.

6. CTC and CFC-113 used as process agent for the applications covered by Phase I

A total of 6 production lines at 5 companies were verified. The verification included CTC and CFC-113 procurement records and was checked against the quantities of the products produced by the companies and the historical ratio from the PA sector plan on CTC consumption per tonnes of the product produced.

Table 4: Enterprises using CTC as process agent in 2005 (25 PA applications)

Enterprises using CTC as process agent	CTC consumption quota (MT)	CTC opening stock (MT)	CTC purchase (MT)	CTC uses as PA (MT)	CTC closing stock (MT)
1. Shanghai Chlor-Alkali Chemical Co., Ltd. (Shanghai Dihe Chem. Plant)	85.00	103.52	83.12	138.99	47.65
2. Jiangyin Fasten Fine Chemical Co. Ltd.	65.00	585.45	64.38	191.84	457.99
3. Fujian Wantaixing Chem. Development Co., Ltd.	63.00	81.39	63.00	104.25	40.14
4. Jilin Chemical Industrial Co. Ltd.	230.00	1080.00	230.43	832.79	477.64
Total in MT	**443.00**	**1,850.36**	**440.93**	**1,267.87**	**1023.42**
Total in ODP tonnes	**487.30**	**2,035.40**	**485.02**	**1,394.65**	**1,125.77**

Table 5: Enterprises using CFC-113 as process agent in 2005 (25 PA applications)

Enterprises using CFC-113 as process agent	2005 Quota (MT)	Opening stock (MT)	Purchase (MT)	Used as PA (MT)	Closing stock (MT)
5. Jinan 3F Fluoro-Chemical Co. Ltd.	4.50	0.00	4.00	4.00	0.00
Total in MT	**4.50**	**0.00**	**4.00**	**4.00**	**0.00**
Total in ODP tonnes	**3.60**	**0.00**	**3.20**	**3.20**	**0.00**

7. CTC import and export

China did not import any CTC and exported 4.75 tons CTC in 2005.

8. National production and consumption

Based on the verification carried out and information provided by SEPA, national CTC consumption and production are shown in the table below.

Table 6: National CTC production

CTC Production	(ODP tonnes)
Gross CTC production in 2005	**47,523.30**
CTC used as feedstock for non-ODS chemicals	-14,296.84
CTC destroyed by technologies approved by the Parties	-146.29
CTC production as per the Agreement in 2005	**33,080.17**
Used as feedstock for CFC production	-25,811.30
National CTC production as per the Montreal Protocol	**7,268.87**

In addition to 485.02 ODP tons use for PA ! and 5,233.00 ODP tons used for PA II , 575.31 ODP tons was used for laboratory uses. The difference between the actual CTC production and the known CTC consumption was 975.54 ODP tons. This is a significant reduction compared to the previous years and shows that the sales licensing system is working.

Table 7: National CTC consumption

CTC Production and Consumption	(ODP tonnes)	MP Baseline
CTC production as per the Montreal Protocol	7,268.87	29,367.4
Import of CTC	0	
Export of CTC	5.23	
CTC consumption as per the Montreal Protocol	7,263.64	55,903.8

Table 8: Montreal Protocol Requirement and National Production and Consumption.

	Production (ODP tonnes)	Consumption (ODP tonnes)
Montreal Protocol Baseline	29,367.4	55,903.8
Montreal Protocol limit in 2005 (85% of baseline)	7,341.85***	8,385.57
Actual CTC production and consumption in 2005	7,268.87	7,263.64

*** The allowed CTC production for consumption include the additional production of 10% of base level allowed for basic domestic need from 2005 to 2009 and 15% from 2010.

CHINA PROCESS AGENT SECTOR PLAN

PHASE I

2005 CTC Production Verification Report

The World Bank

February 2006

I. Summary

The CTC Verification Team verified, using the World Bank's Terms of Reference (TOR) as guidance, the production of each of the nine CTC producers and two CTC residue distillation plants presently producing in China. It was confirmed by the verification and included in the summary report that the 2005 CTC production in China was **37,931.52 ODP tonnes CTC**, which was below the ExCom/China agreed amount of **38,686.00 ODP tonnes CTC** and below the SEPA issued quota of **38,686.00 ODP tonnes CTC**.

In conclusion, the Verification Team confirmed that each producer with six exceptions had produced within the production quotas assigned to them by SEPA. Of the six exceptions, five companies (CTC 02, CTC 11, CTC 12, CTC 15 and CTC 16) claimed that the over-produced CTC was sold to non-ODS feedstock consumers or destroyed by incineration. One company (CTC 09) claimed that it had used its overquota produced CTC as a feedstock to produce methyl chloride (CM1). The conversion is based on newly developed in house technology.

Also, the Verification Team confirmed that, in 2005, one dedicated CTC producer (CTC 08) and one CTC residue distillation plant (CTC 05) were closed and completely dismantled. However, in the same period three new chloromethanes production lines were installed and commissioned within two existing CMs producer's plants (CTC 11 and CTC 15). This added a new CMs capacity totaling 120,000 MT/a, of which co-produced CTC was in the amount of 3,600 MT to 6,000 MT/a (3 to 5% of the CMs total).

The summary of each plant's verified production and assigned quota is found in Table 1 below. The detailed production, raw material, financial figures and the pictures of two dismantled plants are included in the ANNEXES (available upon request) to the summary report .

Table1: Summary of quotas issued by SEPA and verified CTC production in 2005

Sector Plan #	Name of CTC producer	2005 CTC Production Quota, MT	Verified CTC Production in 2005, MT	Comments
CTC 01	Luzhou North Chem. Industries Co., Ltd.	2,106.00	2,098.63	
CTC 02	Zhejiang Juhua Fluorochemical Co., Ltd.	13,604.00	14,951.88	Plant claimed that 1,353.01 MT was sold to non-ODS feedstock consumers.
CTC 03	Liaoning Panjing No. 3 Chemical Plant	0.00	0.00	Plant closed in 2001.
CTC 04	Chongqing Tianxuan Chemical Co., Ltd.	0.00	0.00	Plant closed December 26, 2003.
CTC 06	Chongqing Tianyuan Chem General Plant	0.00	0.00	Plant closed April 16, 2004.
CTC 07	Taiyuan Chemical Industrial Co., Ltd.	0.00	0.00	Plant closed in 1998.
CTC 08	Luzhou Xinfu Chemical Industry Co., Ltd.	717.00	705.54	Production line closed July 2005 and dismantled January 2006
CTC 09	Jiangsu Meilan Chemical Co., Ltd.	2,303.00	4,320.08	2,281.02 MT sent to CTC conversion facility for converting to CM1.
CTC 10	Guangzhou Hoton Chem (Group) Co., Ltd.	0.00	0.00	Plant closed in 1997.
CTC 11	Sichuan Honghe Fine Chemical Co., Ltd.	5,668.00	5,767.15	One new CMs line (40,000 MT/a) was installed and commissioned in 2005. The plant claimed that 101.50 MT of CTC was sold to non-ODS feedstock consumers.
CTC 12	Shanghai Chlor-Alkali Chemical Co., Ltd.	6,609.00	7,211.10	Plant claimed that 674.61 MT was sold to non-ODS feedstock consumers.
CTC 14	Wuxi Greenapple Chemical Co., Ltd.	1,000.00	999.74	
CTC 15	Shandong Jinling Chemical Group Company	1,100.00	4,198.12	Two new CMs lines were installed in 2005 adding an annual capacity of 80,000 MT to its existing capacity of 40,000 MT (120,000 MT total). The plant claimed that 3,100.98 MT of CTC was sold to non-ODS feedstock consumers.
CTC 16	Shandong Dongyue Fluoro-Silicon Material Co., Ltd.	1,461.00	2,350.20	132.99 MT sent to incinerator for destruction and 1.9 MT sent for pilot tests of NH4Cl conversion technology. Besides, the plant claimed that 843.82 MT CTC was sold to non-ODS feedstock users.
CTC MT Subtotal Production		**34,568.00**	**42,602.44**	
CTC 05	Chongqing Tiansheng Chemical Co., Ltd.	5.00	5.00	CTC residue distillation plant. The plant stopped distillation on August 6, 2005 and dismantled the facility on January 27, 2006.
CTC 13	Quzhou Jiuzhou Chemical Co., Ltd.	596.00	595.56	CTC residue distillation plant.
CTC MT Subtotal by Distillation		**601.00**	**600.56**	
2005 CTC Total Production in China		**35,169.00 MT**	**43,203.00 MT**	
2005 CTC Production for Non-ODS Chemicals		**8,586.807 MT**		Reported by SEPA, see Table 2-1
2005 CTC Destruction in China		**132.99 MT**		Reported by SEPA, see Table 2-2
Verified 2005 CTC Production in China		**34,483.20 MT**		**37,931.52 ODP tonnes**
Agreement Limit on 2005 CTC Production in China		**35,169.09 MT**		**38,686.00 ODP tonnes**

II. Companies using CTC for non-ODS production

SEPA reported that China had non-ODS feedstock users consuming 8,586.807 MT CTC in the year of 2005. This amount of CTC non-ODS feedstock consumption includes some newly identified CTC feedstock applications and/or PA applications not yet identified and listed by the Parties. SEPA also reported in 2005 that China destroyed 132.99 MT CTC by incineration. The SEPA-reported CTC non-ODS feedstock consumption and destruction have been deducted from the overall CTC production verification total (see Table 1). The CTC Verification Team did not visit any company using CTC as a feedstock for non-ODS chemical production during its 2005 verification. Detailed information confirmed by SEPA is listed in Table 2-1 and Table 2-2 below.

Table 2-1: Use of CTC as feedstock for non-ODS chemical production in 2005 in MT

No.	Non-ODS feedstock applications	CTC purchase in 2005, MT	CTC consumption in 2005, MT	Reported by
1	DV methyl ester	2037.93	1928.14	SEPA
2	Tetrachloride dimethylmethane	853.12	842.852	SEPA
3	2-methyl-3-(trifluoromethyl) aniline	0	0	SEPA
4	HFC-236fa	416.66	400.08	SEPA
5	HFC-245fa	519.876	447.091	SEPA
6	HFC-365mfc	0	0	SEPA
7	4-TFMOA	0	0	SEPA
8	TFMO	65	53.5	SEPA
9	DFTFB	0	0	SEPA
10	Flunarizine Hydrochloride	1.4	2	SEPA
11	Benzophenone	420.24	442.885	SEPA
12	Cinnamic acid	313.25	300.835	SEPA
13	4,4-difluorodiphenyl ketone	253.429	246.38	SEPA
14	3,3,3-trifluoropropene	0	0	SEPA
15	4-trifluoromethoxybenzenamine	281.407	273.795	SEPA
16	Triphenylmethyl chloride	353.61	354.5	SEPA
17	3,4-Difluoro-1-trifluorotoluene	0	0	SEPA
18	1,2-Benzisothiazol-3-Ketone	115	110.1	SEPA
19	astaxanthin	10	1.5	SEPA
20	Trifluoromethoxybenzene	347.1	335.6	SEPA
21	DPGA	18.1	16.2	SEPA
22	Fluorescent bleaching agent intermediate	299.66	265.16	SEPA
23	Methyl chloride (CM1)	2281.025	2281.025	SEPA
	Total in MT	**8586.807**	**8301.643**	

Table 2-2: China CTC destruction in 2005 in MT

No.	Disposal of CTC	Amount of CTC destructed or converted in 2005, MT	Reported by
1	Destroyed by incineration	132.99	SEPA
	Total in MT	**132.99**	

CHINA CTC PRODUCTION PHASE-OUT PROGRAM
2005 VERIFICATION REPORT
February 3, 2006

CTC Verification Team

- Zhiqun Zhang, Team Leader and International Technical Consultant (Canada)
- Wu Ning, Local Financial Analyst (China)
- E. John Wilkinson, International Technical Consultant (USA), attended 01/15/06 – 01/25/06

Assisted and Accompanying by

- Feng Liulei, Project Officer of State Environmental Protection Administration (SEPA), China, attended 01/10/06 - 01/17/06
- Gong Xingming, Project Officer of SEPA, attended 01/18/06 – 01/28/06

Verification Mission Time Frame

The mission began on January 10, 2006 in Beijing and ended in Chongqing on January 28, 2006. In total 11 CTC production enterprises were visited and verified.

Number	Name of Enterprise	Process	Date of visit
CTC 01	Luzhou North Chemical Industrial Co., Ltd.	Methanol-based	Jan. 26, 2006
CTC 02	Zhejiang Juhua Fluorochemical Co., Ltd.	Methanol-based	Jan. 15-16, 2006
CTC 03	Liaoning Panjin No. 3 Chemical Plant	Closed in 2001	Not visited
CTC 04	Chongqing Tianxuan Chemical Co., Ltd.	Closed in 2003	Not visited
CTC 05	Chongqing Tiansheng Chemical Co., Ltd.	Residue distillation	Jan. 27, 2006
CTC 06	Chongqing Tianyuan Chemical General Plant	Closed in 2004	Not visited
CTC 07	Taiyuan Chemical Industrial Co., Ltd	Closed in 1998	Not visited
CTC 08	Luzhou Xinfu Chemical Industry Co., Ltd.	Methane-based	Jan. 25, 2006
CTC 09	Jiangsu Meilan Chemical Co., Ltd.	Methanol-based	Jan. 20-21, 2006
CTC 10	Guangzhou Hoton Chemical Co., Ltd.	Closed in 1997	Not visited
CTC 11	Sichuan Honghe Fine Chemical Co., Ltd.	Methane & Methanol-based	Jan. 23-24, 2006
CTC 12	Shanghai Chlor-Alkali Chemical Co,	Ethylene-Based	Jan. 17, 2006
CTC 13	Quzhou Jiuzhou Chemical Co., Ltd.	Residue Distillation	Jan. 14, 2006
CTC 14	Wuxi Greenapple Chemical Co., Ltd.	Methanol-Based	Jan. 18-19, 2006
CTC 15	Shandong Jinling Chemical Group Company	Methanol-Based	Jan. 11, 2006
CTC 16	Shandong Dongyue Fluoro-Silicon Material Co., Ltd.	Methanol-Based	Jan. 12, 2006

VERIFICATION METHODOLOGY USED FOR EACH PLANT VISITED

The Verification Team attempted to gather the following information from each plant in order to verify their 2005 CTC production:

- plant identification (name, technical audit number, address, contact person and function title, telephone and fax numbers, and email address);
- plant history (date of construction, number of CTC production lines, capacity in baseline year 2001, and production for 2002, 2003, 2004 and 2005);
- plant process clarification and where within the plant process would it be best to collect CTC production data for our verification;
- CTC production quotas received from SEPA for 2005;
- daily CTC production logs and CTC product transfer records;
- daily and monthly CTC storage inventory; and
- CTC packaged for sales verified from daily movement records of CTC out of the product warehouse.

Secondary information was also gathered in order to support the CTC production data:

- chlorine (Cl_2) consumption from daily shift transfer records and opening and closing stocks from monthly production inventory;
- organic raw material methane (CH_4), methanol (CH_3OH) and ethylene (C_2H_4) supply from daily transfer records;
- organics consumption from daily shift transfer records and monthly opening and closing stocks inventory;
- CTC's co-product's [methyl chloride (CM1), methylene chloride (CM2), chloroform (CM3), and perchloroethylene (PCE)] production in metric tones;
- CTC output ratios and raw material consumption ratios were calculated for CTC/ CMs, CTC/ (PCE+CTC), Cl_2/CTC, CH_4/CTC, CH_3OH/CTC, and C_2H_4/CTC. The Enterprise's annual average ratio was compared with the theoretical value in order to determine whether or not the values varied within a reasonable range and generally slightly above the theoretical value.

Concurrently, a financial verification was conducted by reviewing and checking:

- the accounting system's reliability;
- the financial records related to raw material purchase, storage and transfer;
- the accounting records of CTC production, transfer and sales;

- the track number from the accounting records traced back to the original documents; and
- all inconsistencies between financial records were asked to be clarified.

Once all of the above was completed, the Verification Team would conduct a cross check on the verification results from both the production side and the financial side to ensure the data consistency and determine whether or not the Enterprise's 2005 CTC production data were verified. If there were any irresolvable data differences between the financial analysis and the production verifications, the Team reported the production data. The Team also explained, if possible, the differences in the financial analysis ANNEX II (available upon request).

CHINA PROCESS AGENT SECTOR PLAN

PHASE I

2005 CTC and CFC-113 Consumption

Verification Report

The World Bank

February 2006

SUMMARY

Under the Agreement between China and the Executive Committee of Multilateral Fund for the Process Agent Sector (Phase I), China was required to limit its CTC consumption to 493 ODP tonnes and its CFC-113 to 14 ODP tonnes in the year of 2005.

As guided by the World Bank's Terms of Reference (TOR) for February 2006 PA I consumption verification, the PA Verification Team verified the consumption of CTC and CFC-113 at each of the five enterprises (see Table 1 below) presently running in China that use CTC and CFC-113 as a process agent for the applications covered by CTC/PA Sector Plan (Phase I).

In accordance with the CTC/PA Sector (Phase I) 2005 annual program, the verification included CTC and CFC-113 procurement, consumption and stockpile records and was checked against the quantities of the products that use CTC and CFC-113 as process agent and the historical ratios on CTC and CFC-113 consumption per ton of the product produced.

It was confirmed by the verification and included in the summary report that the verified 2005 CTC and CFC-113 purchases in the PA Sector (Phase I) were **488.22 ODP tonnes**[1], which were below the ExCom/China agreed limit of **507.00 ODP tonnes**[2].

1 ***CTC purchase and consumption:*** The verified CTC purchase and consumption in 2005 was 485.02 ODP tonnes and 1,394.65 ODP tonnes respectively, of which 909.63 ODP tonnes CTC was consumed from the 2004 stockpile while the 485.02 ODP tonnes of CTC purchase was below the 2005 maximum allowable CTC consumption (493.00 ODP tonnes) in the PA sector.

2 ***CFC-113 purchase and consumption:*** The verified CFC-113 purchase and consumption in 2005 was 3.20 ODP tonnes and 3.20 ODP tonnes respectively, which was below the 2005 maximum allowable CFC-113 consumption (14.00 ODP tonnes) in the PA Sector.

In conclusion, the Verification Team confirmed that all enterprises with one exception had purchased CTC and CFC-113 within the PA consumption quotas they received from SEPA. The exceptional company (CSM #51) made an extra purchase of 35.43 MT CTC in October 2005 but only returned 35.00 MT CTC back to the supplier in December 2005, which caused the 430 kg of CTC over-quota procurement.

Also, the Verification Team confirmed that, in 2005, the trial production and equipment modification of new CSM line established in Jilin Chemical (December 2004) had been unsuccessful. Even though a great effort was made by the plant with technical supports from Hong Kong supplier, the imported key equipment (i.e. the solvent stripping and

[1] Including 485.02.00 ODP tonnes of CTC and 3.20 ODP tonnes of CFC-113, see Table 2 of the summary report.
[2] Including 493.00 ODP tonnes of CTC and 14.00 ODP tonnes of CFC-113, see UNEP/OzL.Pro/ExCom/38/70/Rev.1 Annex XIII.

double-screw dry extrusion system) has been in malfunction. Throughout the year of 2005, the new line's reaction system was integrated with the old line's product separation & CTC recovery system[3] for joint producing CSM, and CTC consumption ratios still remained high.

The summary of each enterprise's CTC and CFC-113 purchase, consumption and stockpile in 2005 is found in Table 2 below. The detailed figures and products that use CTC and CFC-113 as process agent are included in Annex I to the summary report.

Table 1 Summary of verified CTC and CFC-113 consumptions in 2005

Sector Plan #	Application	ODS PA	Name of Enterprise using ODS PA	PA 2005 opening stock (MT)	PA 2005 purchase (MT)	PA 2005 use (MT)	PA 2005 closing stock (MT)
1	CR	CTC	Shanghai Chlor-Alkali Chemical Co. Ltd.	103.52	83.12	138.99	47.65
5	CR	CTC	Jiangsu Fasten Fine Chemical Co. Ltd.	585.45	64.38	191.84	457.99
N/A	CR	CTC	Fujian Wantaixing Chem. Development Co. Ltd.	81.39	63.00	104.25	40.14
51	CSM	CTC	Jilin Chemical Industrial Co. Ltd.	1,080.00	230.43	832.79	477.64
Sub-total of CTC PA 2005 use in MT (Figures in brackets are ODP tonnes)				**1,850.36** (2,035.40)	**440.93** (485.02)	**1,267.87** (1,394.65)	**1,023.42** (1,125.77)
167	PTFE	CFC-113	Jinan 3F Fluoro-Chemical Co. Ltd.	0.00	4.00	4.00	0.00
Sub-total of CFC-113 PA 2005 use in MT (Figures in brackets are ODP tonnes)				**0.00** 0.00	**4.00** (3.20)	**4.00** (3.20)	**0.00** 0.00
Total ODS PA 2005 uses in ODS tonnes				**2,035.40**	**488.22**	**1,397.85**	**1,125.77**

[3] All CSM reaction product mixtures were delivered from the new line reaction system and sent directly by pipeline to the old line rear treatment system for CTC recovery and CSM separation, drying and packaging.

CHINA PROCESS AGENT SECTOR PLAN (PHASE I)

2005 CTC AND CFC-113 CONSUMPTION VERIFICATION REPORT

February 23, 2006

PA Verification Team

- Zhiqun Zhang, International Technical Consultant (Canada), the World Bank.

Assisted and Accompanying by

- Feng Liulei, Project Officer of State Environmental Protection Administration (SEPA), China.

Verification Time Frame

The verification mission began on February 9, 2006 in Beijing and ended in Jiangsu on February 20, 2006. In total fine (5) PA enterprises were visited and verified. Baseline information and the verification schedule are tabulated below:

Table 2 Baseline information and PA enterprises visited

Sector Plan #	Name of Enterprise Using ODS PA	Baseline (Ave. 1998-2000)		Date of Visiting
		ODS PA	MT	
Chlorinated Rubber (CR)				
1	Shanghai Chlor-Alkali Chemical Co., Ltd. (Shanghai Dihe Chemical Plant)	CTC	109	Feb 10, 2006
5	Jiangsu Fasten Fine Chemical Co. Ltd	CTC	178	Feb 19, 2006
N/A	Fujian Wantaixing Chem. Development Co. Ltd.	CTC	N/A	Feb 17, 2006
Chlorosulphonated Polyethylene (CSM)				
51	Jilin Chemical Industrial Co. Ltd	CTC	878	Feb 10-11, 2006
Polytetrafluoroethylene (PTFE)				
167	Jinan 3F Fluoro-Chemical Co. Ltd.	CFC 113	4	Feb 13, 2006

VERIFICATION METHODOLOGY USED FOR EACH PLANT VISITED

The Verification Team attempted to gather the following information from each plant in order to verify its 2005 CTC and/or CFC-113 consumption:

- Plant identification (name, sector plan number, address, contact person and functional title, telephone and fax numbers, and e-mail address);
- Plant history (date of construction, number of production lines for each CTC and/or CFC-113 application, and their capacities in the baseline year 2001 and after);

- Plant activities and process modification related to the verification data collection and ODS PA consumption. Clarifying where within the plant process would it be best to collect CTC and/or CFC-113 consumption data for our verification;
- CTC and/or CFC-113 consumption quotas received from SEPA for 2005;
- CTC and/or CFC-113 purchase orders and daily movement records (from outside to plant warehouse, and from plant warehouse to workshop storage);
- CTC and/or CFC-113 stock inventory, including the amount of CTC and/or CFC-113 remained in plant warehouse and in production system; and
- Monthly CTC or CFC-113 consumption was determined by the following formula:
  PA consumption = PA opening stock + PA purchase – PA closing stock

Secondary information was also gathered in order to support the CTC or CFC-113 consumption data:

- Packaging and movement records of CR, CSM and PTFE from production line to product warehouse;
- Dispatching and movement records of CR, CSM and PTFE out of product warehouse for sales;
- Weekly and monthly inventory records of CR, CSM and PTFE stocks;
- Daily production logs and number of operating days;
- CTC/CR, CTC/CSM or CFC-113/PTFE consumption ratios were calculated for each PA enterprise; and
- Inspecting production line(s), CTC or CFC-113 warehouse and workshop storages, and CR, CSM or PTFE product warehouse.

Concurrently, a financial check was conducted at each plant by reviewing the accounting records and Value-Added Tax (VAT) receipts of all CTC or CFC-113 purchases made in 2005. If there was any discrepancy between the financial record and the production verification, the Team reported the production verification result and, if possible, explained the difference based on the plant visit.

Once all of the above was completed, the PA Verification Team would determine whether or not the enterprise's 2005 CTC or CFC-113 consumption data were verified.

2006 Annual Program for Sector Plan for Phaseout ODS Process Agent Applications (PhaseII) and Corresponding CTC Production in China

2006 ANNUAL PROGRAM

March 7, 2006

Data Sheet

Country	China
Year of plan	2006
# of years completed	0
# of years remaining under the plan	4
Target ODS consumption of the preceding year	n/a
Target ODS consumption of the year of plan	7,438 ODPt-CTC
Target ODS Production of the year of plan	29,661 ODPt-CTC
Level of funding requested	US$ 15,000,000
National Implementing operating agency	State Environment Protection Administration
International implementing agency	The World Bank

Table of Contents

2006 Annual Program for Sector Plan for Phaseout ODS Process Agent Applications (Phasell) and Corresponding CTC Production in China

INTRODUCTION

1. The ExCom meeting in Nov. 2005 has approved in principle a funding level of US$46,500,000 for the implementation of the Sector Plan for Phase out ODS process Agent Application (Phase II) and Corresponding CTC Production in China, and we expect an amount of US$25,000,000 will be allocated for the 2006 annual program.

2. This first Annual Program covers activities in both ODS PA (phase II) consumption and CTC production sectors in 2006. Phaseout activities will start immediately after provision of funding following approval of the Annual Program of 2006.

ANNUAL PHASEOUT TARGETS AND FUNDING LEVEL

3. ***Phaseout obligations.*** The agreed phaseout targets and corresponding funding for this phaseout of the PA and CTC Production sectors is as follows:

Table 1: Allowable CTC Production and Consumption under the CTC/PA (Phase I and II) Sector Plan (ODP tonnes)

	Baseline (2003)	2006	2007	2008	2009	2010	
1. Max allowed CTC production for consumption under the MP	**29,367**	**7,342**	**7,342**	**7,342**	**7,342**	**4,405**	
2. Max allowable CTC consumption as per the Montreal Protocol control measures	**55,900**	**8,385**	**8,385**	**8,385**	**8,385**	**1,214***	
3. Max allowable CTC consumption in CTC/PA (Phase I) sector plan	**5,049**	**493**	**493**	**493**	**493**	**220***	
4. Max allowable CTC consumption in CTC/PA (Phase II) sector plan	5,411	7,892	7,892	7,892	7,892	**994***	
5. Potential new Process Agent Applications	Not Applicable	Not Applicable	Not Applicable	TBD	TBD	TBD	
MULTILATERAL FUND SUPPORT (in US$ thousands)							Total
6.MLF Funding for the Annual Programs		25,000	10.000	10.000	1.500	0	46.500
7.Agency support costs							

Accordingly, the targets for the 2006 Annual Program are as follows:

a) Total CTC production for CTC consumption and CFC feedstock will not exceed 29,661 ODP Tons (26,964 MT) in 2006.

b) National annual CTC consumption control target in 31 PA applications will not exceed 7,892 ODP Tons (7,174 MT) in 2006.

ACTIVITIES TO BE COVERED IN THE 2006 ANNUAL PROGRAM

4. The implementation modalities for Annual Programs are contained in the CTC/PA Sector Plan (Phase II) document. The Sector Plan for Phaseout ODS Process Agent Applications (Phase) and Corresponding CTC Production in China has been finalized. This Program will support the following activities, which are further described in the sections that follow:

(a) Issuance and enforcement of CTC production quota systems;
(b) Activities addressing CTC surplus from CM plants.
(c) Issuance and enforcement of CTC consumption quota system for the PA II Sector Plan
(d) Closure of small CPP & CEVA enterprises and PA II enterprises with limited or no production,
(e) Follow the development of substitute technology for CPP & CEVA,
(f) Preparation of technical proposals for emission control for CPP&CEVA enterprises;
(g) Initiate conversion contracts with MPB, MIC, CNMA, CCMP, Imidacloprid and Buprofenzin PA enterprises,
(h) Review of potential new process applications and technologies available, and
(i) Technical assistance activities.

PROGRAMMED ACTIVITIES DURING THE YEAR

5. ***Policy actions.*** The following policy measures will be initiated by the Government. These actions are necessary to implement of the annual program and for the success of the sector plan (Phase II).

(a) Reinforce CTC production quota systems: A system to limit production of CTC has been established in 2003. According to this system, production quotas will be issued to CTC producers every year to ensure that total production does not exceed the amount specified by the quotas, and quarterly reporting will be required from the producers. The CTC production quota system works well from 2003, which will be reinforced in PA II sector plan.

(b) Strengthening CTC consumption quota system for the PA Sector (Phase II): A CTC consumption quota system has been established in 2003 for the implementation of the PA I sector plan. This system will be applied to PA II sector plan accordingly. According to this system, all CTC users should submit their annual CTC consumption plan for the following year by the end of October to SEPA for reference and approval in December each year. The actual CTC procurement quota for the following year will be issued based on their actual CTC consumption in the **base- or current year** and the overall national CTC consumption control target, to ensure that total consumption for PAII sector in 2006 does not exceed the allowed maximum, 7,892 ODP tons CTC.

(c) Strengthening CTC sales registering system: The system is well implemented in the PA I sector plan to control CTC sales and consumption, and will be strengthened and enforced more strictly. According to the system, all CTC dealers must be registered and should quarterly submit their CTC sales records to SEPA. ,

(d) The **"Complimentary Circular on Strict Control of New Construction or Capacity Expansion of CTC Consumption Production Line"** will be promulgated in 2006. The circular will ban new construction and capacity expansion of all production lines that use CTC as process agent. The circular aims to curb the rapid development of consumption of CTC for new potential process agents applications, which have not yet been reviewed and approved by the Party. This will also facilitate phaseout of CTC used in potential new process agents applications.

6. ***Enterprise-level activities*.** There will be five types of activities at the enterprise level: production quotas for CTC producers, and emissions control, conversions, closures for PA enterprises and signing agreement with enterprises on permanent stop use of CTC for some production lines related to 13 PA applications. All these activities will be based on assignment of quotas.

(a) ***Production Quotas for CTC producers:*** Quotas are presently assigned to all eligible CTC producers under the PA I sector plan. Under PA II sector plan the quotas will be adjusted to ensure that the maximum allowable production limit of 29,661 ODP tonnes of CTC in 2006 is not exceeded. In addition, PA II will also address how to handle the remaining CTC production at CMs plants in the following years,.

(b) ***Consumption quotas for all PA II enterprises:*** CTC consumption quotas will be assigned to all eligible PA II enterprises based on their base year consumption and present situation to ensure that the maximum allowable consumption is limited to 7,892 **ODP tonnes of CTC** in 2006.

(c) ***Phaseout Contracts :*** PA II enterprises have the right to choose their phase-out modality. The enterprises will have the following options:

(I) ***Closure:***. For PA II enterprises selecting the closure option in 2006, contracts will be signed as soon as possible. All the enterprises selecting the production closure option will stop production within the year and the production equipment will be dismantled.

(II) ***Conversion:*** For the PA II enterprises that wish to receive MLF funding in 2006 for conversion can apply for financial support. The companies will hire professional engineering companies to assist preparing their conversion projects. Contract will be signed based on a review and approval by SEPA of their proposal and available MLF funds. The experience gained from the projects will provide valuable information for other PA II enterprises that will sign conversion contracts later.

(III) ***Emission control:*** For CPP/CEVA, PA enterprises with capacity over 1000t/a who wish to implement emission control projects in 2007 will have to submit their proposals to SEPA for review and approval in 2006. The emission reduction projects will have to be initiated in 2007..

(d) ***Sign agreement on permanent stopping use of CTC with enterprises related to 13 PA applications:*** For some PA II enterprises who do not want to dismantle the multifunctional production line and commit to stop the production of the CTC related product and only use the production line for the production of other products using ODS free technology, agreement on permanent stopping use of CTC as process agent for the CTC related product will be signed with them.

(e) ***Preparation for other options:*** Preparation of activities for substitute technologies and emission control for 2007 and 2008 will be initiated in 2006.

7. ***Technical assistance (TA) activities***. TA activities are essential to the success of the phaseout objective. All terms of references and detailed work programs will have to be agreed with the World Bank before implementation. 2006 TA activities will include:

(a) ***Extension of the Management Information System (MIS) to include ODS Phaseout in PA II sector plan.*** The MIS is an important tool in the management and supervision of all phaseout activities. It is used to monitor ODS phaseout and closure activities. It is also the basic instrument to generate progress reports on the implementation of the ODS phaseout required for SEPA management, the ExCom, and the World Bank. This system will be extended to cover the second phase of the PA sector.

(b) ***Training of personnel involved in implementation of phaseout activities.*** To implement the phaseout plan effectively, it is necessary to provide training to: (i) CTC producers; (ii) CTC dealers; (iii) auditors; (iv) ODS consumers that use CTC as new PA; and (v) ODS consumers in the PA Sector (Phase II). Training is needed to prepare enterprises to carry out phaseout activities in the following years, to train government officials to properly supervise ODS PA consumption, and to refine operating procedures of the sector phaseout approach. This type of training will need to be repeated every year in the first few years of implementation. However, training of CTC producers, dealers and auditors will be implemented in the PAI sector plan.

(c) ***Domestic investigation of new PA consumers other than PAI and PAII:*** As China government promised to provide a detailed report of new PA applications in China by the end of 2006, and promised to phaseout new PA applications once the Party would list them as PA, it's very important and urgent for China to identify clearly all the PA consumers other than PAI and PAII as soon as possible. A consultant firm will be selected in the early 2006 to carry out the investigation, which will cover the conditions of production, production process, capacity, CTC consumption, enterprise knowledge of possible

substitute technologies, etc. The investigation will assist China in control and future phaseout of new PA.

(d) ***Study of CTC consumption and emission in production of CPP/CEVA:*** China requested 994 ODP tonnes CTC consumption in PAII sector plan in 2010. However, the 994 means CTC make-up quantity, not consumption or emission. As the Party hasn't definite stipulation of emission control level of PA for Article 5 country, it's not clear that whether the 994 ODP tons of CTC is feasible and will be accepted by the Party. Therefore, China government feels it essential to study details of CTC consumption and emission in CPP/CEVA production.

(e) ***Technical consulting services of experts.*** Individual consultants will be recruited to provide technical services on substitute technologies of CTC PA applications to SEPA to review and provide comments on the technical proposals and safety issues. Experienced domestic experts will be selected based on the procurement rules of World Bank.

(f) ***Other activities.*** Other TA activities that are identified in the course of the year will be taken up as necessary.

8. The above targets, policy initiatives, enterprise-level and technical assistance activities are summarized in Tables 2 - 4 below.

Table 2: Targets under 2006 Annual Program

Target I	**Maximum Allowable sum of production and Imports of CTC**						
Indicators	**Sub-sector**	**2006 (Based on PA I Agreement)**	**2006 (year of Program)**	**Reduction (ODP t-CTC)**	**Funding US$'000**	**Key actions required**	**Key dates**
		(ODP Tons)					
Supply of CTC	Import	0	0			None; imports banned on April 1, 2000	N/A
	Production	32,044	29,661	2,383	0*	1. Issue CTC production quotas. 2. Sign CTC production reduction contracts.	1.By March 31, 2006 2. By Feb 28, 2006
	Total	**32,044**	**29,661**	**2,383**	**0***		
Target II	**National annual CTC Consumption in the PA Sector (Phase II)**						
Indicators			**2006 (year of Program)**	**Reduction**	**Funding US$'000**	**Key actions required**	**Key dates**
		(ODP Tons)					
Consump-tion of CTC	31 PA enterprises		7,438	/	24,000	1. Issue CTC consumption quotas. 2. Sign CTC consumption phaseout contracts.	1. By March 31, 2006 2. By June 30, 2006
	Total		**7,438**	**/**	**24,000**		

*The funding for CTC production reduction contracts will be originated from CTC/PAI sector plan.

Table 3: Policy Actions

Policy/Activity Planned			
Initiatives	**Funding Requested**	**Actions Required**	**Key Dates**
1. Policies to control CTC Production, consumption and sales.	N/A	1. Issue production quotas to CTC producers. 2. Issue consumption quotas to CTC consumers. 3. Issue registering license to CTC dealers. 4. Issue "Complimentary Circular on Strictly Control of New Construction or Capacity Expansion of CTC Consumption Production Line"	1. March 2006 2. Jan 2006 3. Jan 2006 4. April 2006

Table 4: Technical assistance activities

Technical assistance activities				
Proposed Activity	**Target group**	**Funding (US$ Million)**	**Actions Required**	**Key Dates**
1. Extension of MIS to this sector	Government and domestic implementing agency	0.050	1. TOR to be agreed with the Bank 2. Selection of contractors 3. Contract signing with contractor 4. Reinforce MIS in PMO	1. April 2006 2. May 2006 3. June 2006 4. Operational by Dec. 2006
2. Training of personnel involved in implementation of phaseout activities.	Government enforcement agencies	0.1 (just for 13 PA consumers training)	1. TOR to be agreed with World Bank 2. Training of 13 PA enterprises	1. April 2006 2. June 2006
3. Domestic investigation of new PA consumers		0.150	1. TOR to be agreed with the Bank 2. Selection of contractors 3. Contract signing with contractor 4. Domestic investigation 5. Seminar to discuss the survey report 6. Final report	1. Feb. 2006 2. March. 2006 3. April, 2006 4. May– Sep. 2006 5. Oct. 2006 6. Dec. 2006
4. Study of CTC consum/emission in CPP/CEVA production		0.100	1. TOR to be agreed with the Bank 2. Consultant selection 3. Contract signing with contractor 4. Field study 5. Final report	1. April 2006 2. May 2006 3. June, 2006 4. Jul.- Nov. 2006 5. Dec. 2006
5. Technical consulting services of experts		0.300	1. TOR to be agreed with the Bank 2. Selection of experts 3. Service Contract signed with experts 4. Travel costs of experts will be included	1. April, 2006 2. May, 2006 3. June, 2006
6. Other TA		0.300		
Total for TA activites		**1.000**		
Total annual funding		**25.000**		

ANNEX I: PRODUCTION AND STATUS OF CTC PRODUCERS

No.	Enterprise Name	Type of CTC production facility	Capacity in 2001[1] (MT/year)	CTC Production Recorded				Status
				2001	2002	2003	2004	
CTC-1	Luzhou North Chemical Industrial Co., Ltd.	Co-production	3,000	2,106	2,318	2,105	2093.8	Producing
CTC-2	Zhejiang Quhua Flurochemical Co. Ltd.	Co-production	20,000 (22,250)	16,204	17,217	16,204	15986.01	Producing
CTC-3	Liaoning Panjin No. 3 Chemical Plant	Dedicated	3,000	0	0	0	0	Dismantled in May 2004
CTC-4	Chongqing Tianxuan Chemical Co., Ltd.	Dedicated	4,400	2,100	3,067	870	0	Dismantled in Dec 2003
CTC-5	Chongqing Tiansheng Chemical Co. Ltd	Distilling	500	245	195	130	31.14	Producing
CTC-6	Chongqing Tianyuan Chemical General Plant	Dedicated	9,000	8,009	8,198	6,114	1429.27	Dismantled in Dec 2004
CTC-7	Taiyuan Chemical Industrial Co., Ltd.	Dedicated	4,000	0	0	0	0	Dismantled in Nov 2004
CTC-8	Luzhou Xinfu Chemical Industry Co. Ltd.	Dedicated	8,000	6,903	7,754	5,203	4488.6	Producing
CTC-9	Jiangsu Meilan Chemical Co., Ltd.	Co-production	3,500 (10,000)	703	2,929	3,396	3450.46	Producing
CTC-10	Guangzhou Hoton Chemical (Group) Co., Ltd.	co-production	5,000	0	0	0	0	Closed and Dismantled in 1997

CTC-11	Sichuan Honghe Fine Chemical Co., Ltd.	Co-production	4000	3,451	21,018	13,763	11935.78	Producing
		Dedicated	16,000 (17,750)	13,806				Producing
CTC-12	Shanghai Chlor-Alkali Chemical Co., Ltd.	Co-production with PCE	10,000	7,209	9,192	7,209	7909	Producing
CTC-13	Quzhou Jiuzhou Chemical Co., Ltd.	Distilling	1,000	596	477	594	602.5	Producing
CTC-14	Wuxi Greenapple Chemical Co., Ltd.	Co-production	0 (2,000)	/	/	495	1139.28	Start production in 2003
CTC-15	Shandong Jinling Chemical Co., Ltd.	Co-production	0 (2,000)	/	/	148	1721.34	Start production in 2003
CTC-16	Shandong Dongyue Chemical Co., Ltd.	Co-production	0 (2,500)	/	/	/	309.8	Start production 2004
CTC-17	Jinan 3F Fluorochemical Co., Ltd.	Dedicated	4000	0	0	0	0	Dismantled in July 2004
Total (ODS tons)			95,400 (112,400)	61,332	72,365	56,231	51096.98	
Total (ODP tons)				67,465	79,602	59,860[2]	56206.68[3]	

1: The data in parenthese is the CTC capacity in 2004.

2: There are 1,813 MT CTC were verified as feedstock for non-ODS chemicals in 2003.

3: There are 5465.47 MT CTC were verified as feedstock for non-ODS chemicals in 2004.

ANNEX II: INFORMATION ON PA (PHASE II) ENTERPRISES

A. ODS Consumption of Each Applications in 2001-2003

ODS used	Application No.	Product	Annual consumption of ODS (t/a)		
			2001	2002	2003
CTC	PA19	Cyclodime	230.95	180.55	152.85
CTC	PA20	CPP	2,303.98	3,157.15	2,505.32
CTC	PA21	CEVA	188.68	208.22	225.08
CTC	PA22	MIC derivatives	718.35	627.58	574.54
CTC	PA23	MPB	623.23	587.61	679.95
CTC	PA24	DCMP	0.00	0.00	0.00
CTC	PA25	Imidacloprid	487.54	726.10	264.81
CTC	PA26	Buprofenzin	213.09	199.38	316.87
CTC	PA27	Oxadiazon	14.25	24.70	57.00
CTC	PA28	CNMA	108.80	133.13	136.12
CTC	PA29	Mefenacet	22.24	8.11	6.93
CTC	PA30	DCBT	16.03	0.00	0.00
		Sub-Total CTC tons	**4,927.15**	**5,852.52**	**4,919.46**
BCM	PA31	BPS	0.00	0.00	0.00
		Total ODP tons	**5,419.87**	**6,437.77**	**5,411.4**

B. Production Lines of Each Applications

Application Number	Name of Application	Total Number of Production Lines (Number of enterprises in brackets)	With production in 2003, and eligible	No production in 2003, but eligible	With production, but not eligible
PA19	Cyclodime	9	6	3	0
PA20/21	CPP/CEVA	15	15	0	0

PA22	MIC	6	6	0	0
PA23	MPB	3	3	0	0
PA25	Imidacloprid	4	3	1	0
PA26	Buprofenzin	3	2	1	0
PA27	Oxadiazon	3	1	2	0
PA28	CNMA	1	1	0	0
PA29	Mefenacet	1	1	1	0
Totals		45（40*）	38	7	0

*For details see the following Table ”C. Eligible enterprises”

C. PA Enterprises in the Sector Plan

Ser. No	**Enterprise name**	**Product**
1	Suzhou XianKe Chemical Industry Co., Ltd.	CPP
2	Suzhou Hengteng Chemical Co., Ltd.	CPP
3	Guangdong Yangchun Gangli Chem Co., Ltd.	CPP
4	Harbin Qianyu Fine ChemCo.,Ltd.	CPP
5	Changshu Xiangyang Rubber-Resin Auxiliary Plant	CPP
6	Yancheng Runhua Application chemical Institute	CPP
7	Yan Cheng San Hua Chemical Co., Ltd.	CPP
8	Shandong Huayang Pesticide Chem Ind Group Co., Ltd	CPP
9	Shanxi Xizhou Sihai Chemical Co., Ltd.	CPP
10	Shenyang Kunmei Decoration MaterialCo.,Ltd.	CPP
11	Xingang Coraphite Industry Co.,Ltd.	CPP
12	Guangzhou Jinzhujiang Chemical Co., Ltd.	CPP/CEVA
13	Shunde Antai Printing Ink Chemical Co., Ltd.	CPP/CEVA
14	Jincheng Chemical Co., Ltd.	CPP/CEVA
15	Rudong Shidian Chemical	CPP
16	Sanonda(Jingzhou) Pesticides & Chem Co., Ltd.	MIC/MIC Derivs.
17	Hunan Gofar Fine Chem Industry Tech. Co., Ltd.	MIC/MIC Derivs.
18	Hunan Haili Chem Industry Co., Ltd. Pilot Plant	MIC/MIC Derivs.
19	JiangSu Changlong Chemical Co., Ltd.	MIC/MIC Derivs. *Buprofenzin* *Imidacloprid,* *Mefenacet*

20	*JiangSu Changlong Chemical Co., Ltd.*	**Mefenacet** *MIC/MIC Derivs.* *Buprofenzin* *Imidacloprid,*
21	Haili Guixi Chemical Pesticide Co., Ltd.	MIC/MIC Derivs.
22	ShangDong Huayang Tech. Co.,Ltd.	MIC/MIC Derivs.
23	Jiangyin Tongzhi Tianlong Chemical Factory	MPB
24	Jintan Huasheng Chemical Adjuvant Co. Ltd	MPB
25	Changzhou Yekang Chemical Product Co.,Ltd.	Chlordane Mirex
26	Dongtai No.3 Chemical Factory	Chlordane
27	Liyang Guanghua Chemical Co., Ltd.	Chlordane/ Mirex
28	Liyang Xinhai Chemical Factory	Chlordane / Mirex
29	Shanghai Fengjiang Termite Control Co., Ltd.	Chlordane / Mirex
30	Suzhou Jianfeng Termite Control Co.Ltd.	Chlordane
31	Jintan Shuibei Termite Control Material Factory	Chlordane
32	Taicang Xintang The second Chemical Factory	Chlordane / Mirex
33	Tangcang HushiReagent CO., Ltd	Chlordane
34	Jiangsu Anpon Electrochemical Co., Ltd.	Buprofenzin
35	Zhejiang Longyou Greenland Pesticide Co., Ltd.	Buprofenzin
36	Jiangsu Yangnong Chemical Group Co., Ltd.	Imidacloprid
37	Zhejiang Hisun Chemical Co., Ltd.	Imidacloprid
38	Jingjiang Jindun Agrochemical Co. Ltd.	Oxadiazon
39	Luzhou Agrochemical	Oxadiazon
40	Chongqing Changfeng Chemical Factory	CNMA

D. CTC Consumption for Each Sub-sector and Enteprise

Unit: MT

Enterprise Name	**2001**	**2002**	**2003**
CPP producers (CTC)			
Suzhou XianKe	189.46	147.37	120.70
Suzhou Hengteng	0.00	32.00	10.02
Yangchun Gangli	435.00	494.58	315.00
Guangzhou Jinzhujiang	795.70	666.12	430.91
Antai Printing Ink	0.00	0.00	18.18
Jincheng Chem.	260.72	872.03	715.58
Qianyu Fine Chem.	148.80	313.40	296.40
Changshu Xiangyang	171.00	153.00	150.00

Yancheng Runhua	144.33	161.64	159.52
San Hua Chem.	27.88	95.00	148.00
Kunmei Decoration	n.a.	57.00	23.00
Huayang Group	n.a.	n.a.	n.a.
Xinzhou Shai	131.10	149.00	50.00
Xingang Coraphite	0.00	0.00	38.00
Shidian Organic Chemicals	0.00	16.00	30.00
Sub-Total	**2303.98**	**3157.15**	**2505.32**
CEVA producers (CTC)			
Guangzhou Jinzhujiang	131.25	110.98	114.38
Antai Printing Ink	0.00	2.00	9.00
Jincheng Chem.	57.43	95.25	101.70
Sub-Total	**188.68**	**208.22**	**225.08**
MIC Series producers(CTC)			
Jingzhou Sanonda	46.65	60.97	29.49
Gofar Fine Chem.	68.23	70.22	88.21
Hunan Haili	58.58	81.26	76.24
Changlong Chem.	105.45	137.37	97.98
Haili Guixi	311.47	195.57	202.6
Huayang Tech.	127.97	82.2	80.03
Sub-Total	**718.35**	**627.58**	**574.54**
MPB producers(CTC)			
Suhua Group	493.20	456.07	501.89
Jintan Huasheng	130.03	131.54	178.06
Jiangyin Tongzh	n.a	n.a	n.a
Sub-Total	**623.23**	**587.61**	**679.95**
Imidacloprid producers(CTC)			
Changlong Chem.	178.99	313.93	81.36
Suhua Group	140.90	1.32	0.00
Yangnong Group	0.00	8.80	160.20
Hisun Chem.	167.65	402.05	23.25
	487.54	**726.10**	**264.81**
Buprofenzin producers(CTC)			
Anpon Electrochem	93.99	102.11	189.91
Changlong Chem.	57.70	97.27	126.96
Longyou Greenland	0.00	0.00	0.00
	213.09	**199.38**	**316.87**

Oxadiazon producers(CTC)			
Jindun Agrochem.	14.25	24.70	57.00
Suhua Group	/	/	/
Luzhou Agrochemical	0.00	0.00	0.00
	14.25	**24.70**	**57.00**
CNMA producer(CTC)			
Changfeng Chem.	108.80	133.13	136.12
	108.80	**133.13**	**136.12**
Mefenacet producers(CTC)			
Changlong Chem.	22.24	8.11	6.93
Suhua Group	/	/	/
	22.24	**8.11**	**6.93**
DCBT producer(CTC)			
Changfeng Chem.	16.03	0.00	0.00
	16.03	**0.00**	**0.00**

DRAFT – February 2006

DRAFT AGREEMENT BETWEEN CHINA AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE PHASE-OUT OF ODS PROCESS AGENT APPLICATIONS (PHASE II)

1. This Agreement represents the understanding of China and the Executive Committee with respect to the complete phase-out of **controlled CTC production and consumption** of the ozone depleting substances set out in Appendix 1-A ("The Substance and PA Applications") prior to Jan. 1 of 2010, compliance with Protocol schedules.

2. The Country agrees to phase out the controlled use of the Substances in accordance with the annual phase-out targets set out in Appendix 2-A ("The Targets, and Funding") under this Agreement. The annual phase-out targets will, at a minimum, correspond to the reduction schedules mandated by the Montreal Protocol. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to CTC production and consumption phase-out requirements as defined by the Montreal Protocol as per Decision XVII/6 taken at the 17th meeting of the Parties to Montreal Protocol.

3. Subject to compliance with the following paragraphs by the Country with its obligations set out in this Agreement, the Executive Committee agrees in principle to provide the funding set out in row 6 of Appendix 2-A ("The Targets, and Funding") to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A ("Funding Approval Schedule").

4. The Country will meet the overall production and consumption limits of CTC as indicated in Appendix 2-A. It will also accept independent verification by the relevant Implementing Agency of achievement of these consumption limits as described in paragraph 8 of this Agreement.

5. The Executive Committee will not provide the Funding in accordance with the Funding Approval Schedule unless the Country satisfies the following conditions at least **4 weeks** prior to the applicable Executive Committee meeting set out in the Funding Approval Schedule:

(a) That the Country has met the Target for the applicable year;

(b) That the meeting of the Target set in row 4 in table in Appendix 2-A has been independently verified as described in paragraph 8; and

(c) That the Country has substantially initiated all actions set out in the last Annual Implementation Programme;

(d) That the Country has submitted and received endorsement from the Executive Committee for an Annual Implementation Programme in the form of

Appendix 4-A ("Format for Annual Implementation Programmes") in respect of the year for which funding is being requested.

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A ("Monitoring Institutions and Roles") will monitor and report on that monitoring in accordance with the roles and responsibilities set out in Appendix 5-A. This monitoring will also be subject to independent verification as described in paragraph 8.

7. While the Funding was determined based on eligible incremental costs and on the basis of estimates of the needs of the Country to carry out its obligations under this Agreement, the Executive Committee agrees that the Country has flexibility to use the Funding for other purposes that can be demonstrated to facilitate the smoothest possible phase-out, consistent with this Agreement, whether or not that use of funds was contemplated in determining the amount of funding under this Agreement. Any changes in the use of the Funding must, however, be documented in advance in the Country's Annual Program, endorsed by the Executive Committee as described in sub-paragraph 5(d) and be subject to independent verification as described in paragraph 8.

8. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. The World Bank has agreed to be the lead implementing agency ("Lead IA") in respect of the Country's activities under this Agreement. The Lead IA will be responsible for carrying out the activities listed in Appendix 6-A including but not limited to independent verification. The country also agrees to periodic evaluations, which will be carried out under the monitoring and evaluation work programmes of the Multilateral Fund. The Executive Committee agrees, in principle, to provide the Lead IA with the fees set out in rows 7 of Appendix 2-A.

9. Should the Country, for any reason, exceed the CTC production and consumption limits given in Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Schedule. In the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next instalment of Funding under the Funding Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amounts set out in Appendix 7-A in respect of each ODP tonne of the amount exceeding the Maximum Allowable CTC Production and Consumption limit (Appendix 2-A) in any one year.

10. The funding of this Agreement will not be modified on the basis of any future Executive Committee decision that may affect the funding of any other ODS sector projects or any other related activities in the Country.

11. The Country will comply with any reasonable request of the Executive Committee and the Lead IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA with access to information necessary to verify compliance with this Agreement.

12. All of the agreements set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Protocol unless otherwise defined herein.

APPENDIX 1-A THE SUBSTANCES AND PA APPLICATIONS

1. The ozone-depleting substance to be phased out under the Agreement is CTC production (Annex B, Group II) and ODS consumption for the following process agent applications (see Decision XV/6 of ExCom (UNEP/OzL.Pro.15/9).

No.	Process agent application	Substance
19	Production of Cyclodime	CTC
20	Production of chlorinated polypropene	CTC
21	Production of chlorinated EVA	CTC
22	Production of methyl isocyanate derivatives	CTC
23	Production of 3-phenoxy bezaldehyde	CTC
24	Production of 2-chloro-5-methylpyridine	CTC
25	Production of Imidacloprid	CTC
26	Production of Buprofenzin	CTC
27	Production of Oxadiazon	CTC
28	Production of Chlordized N-methylaniline	CTC
29	Production of Mefenacet	CTC
30	Production of 1,3-dichlorobenzothiazole	CTC
31	Brominated styrenic polymer	BCM (bromochloromethane)

APPENDIX 2-A THE TARGETS, AND FUNDING (ODP tonnes)

	Baseline (2003)	2006	2007	2008	2009	2010	
1. Max allowed CTC production for consumption under the MP	29,367	7,342	7,342	7,342	7,342	4,405	
2. Max allowable CTC consumption as per the Montreal Protocol control measures	55,900	8,385	8,385	8,385	8,385	1,214*	
3. Max allowable CTC consumption in CTC/PA (Phase I) sector plan	5,049	493	493	493	493	220*	
4. Max allowable CTC consumption in CTC/PA (Phase II) sector plan	5,411	7,892	7,892	7,892	7,892	994*	
5. Potential new Process Agent Applications	Not Applicable	Not Applicable	Not Applicable	TBD	TBD	TBD	
MULTILATERAL FUND SUPPORT (in US$ thousands)						Total	
6. .MLF Funding for the Annual Programs		25.000	10,000	10,000	1,500	46.500	
7.Agency support costs							

- The allowed CTC production for consumption include the additional production of 10% of base level allowed for basic domestic need from 2005 to 2009 and 15% from 2010

- The Bank will verify consumption by companies and applications covered by the PA II Sector Plan (Row 5). The annual verification will cover a random selection of at least [30%] of all enterprises covering at least [30%] of the PA II consumption,

- Consistent with Decision XVII/6 of the Parties to the Montreal Protocol, potential new process agent applications will be considered consumption from 2008 in accordance with decisions to be taken at the 19th meeting of the Parties to the Montreal Protocol in 2007.

- China will collect information on the use of CTC by companies using processes covered by the new process agent applications when the applications have been confirmed by the Parties,

- It is understood that the proposed emission level for CPP and CEVA enterprises using emission control technology should be reviewed and endorsed by the Parties before 2010 to ensure that they represent "reasonable achievable in a cost effective manner without undue abandonment of infrastructure" consistent with Decision X/14.

APPENDIX 3-A FUNDING APPROVAL SCHEDULE(US$'000)

1. Funding other than the payments in 2006, will be considered for approval at the **second meeting of the year** of the annual implementation plan. The agreed funding level for each year is shown in row 6 in Appendix 2-A.

APPENDIX 4-A- FORMAT FOR ANNUAL IMPLEMENTATION PROGRAMMES

1. The 2006 AP of the CTC/PA sector plan (phase II) submitted with the PA II Sector Plan is consistent with the agreed format for Annual Programs. This format will be used for following years Annual Implementation Programs

APPENDIX 5-A MONITORING INSTITUTIONS AND ROLES

1. PMO is the core organization for monitoring the implementation of PA II Sector Plan with the responsibility for reporting to the World Bank. PMO will be responsible for monitoring implementation of policy measures and technical assistance activities and for submitting quarterly progress reports to the Bank.

2. DIA will assist PMO in managing implementation of PA II Sector Plan and will submit quarterly reports to PMO.

3. The implementation status of the PA II Sector Plan will be reported to ExCom once a year through the Annual Programs.

4. The Bank will supervise the implementation of Annual Programs and will have access to any ongoing and completed activities, including random visits to PA enterprises and CTC producers under the PA II Sector Plan.

APPENDIX 6-A ROLE OF THE LEAD IMPLEMENTING AGENCY

1. The Lead IA will be responsible for a range of activities to be specified in the project document along the lines of the following:

(a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's phase-out plan;

(b) Providing verification to the Executive Committee that the Targets have been met and associated annual activities have been completed as indicated in the annual implementation programme;

(c) Assisting the Country in preparation of the Annual Implementation Programme;

(d) Ensuring that achievements in previous Annual Implementation Programmes are reflected in future Annual Implementation Programmes;

(e) Reporting on the implementation of the Annual Implementation Programme of the preceding year and preparing an Annual Implementation Programme for the year for submission to the Executive Committee;

(f) Ensuring that technical reviews undertaken by the Lead IA are carried out by appropriate technical experts;

(g) Carrying out required supervision missions;

(h) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Annual Implementation Programme and accurate data reporting;

(i) Verification for the Executive Committee that consumption of the Substances has been eliminated in accordance with the Target;

(j) Ensuring that disbursements are made to the Country in a timely and effective manner; and

(k) Providing assistance with policy, management and technical support when required.

APPENDIX 7-A REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY

1. In accordance with paragraph 9 of the Agreement, the amount of funding provided may be reduced by [US $ 1,000] per ODP tonne of reductions in production and consumption not achieved in the year.

CHINA CFC PRODUCTION PHASE-OUT PROGRAM
2005 VERIFICATION REPORT
FEBRUARY 21, 2006

Inspection Team

F.A. Vogelsberg: Mission Leader and primary text preparation - Annex I
Hua Zhangxi (HZX): Data Summary - Annex II (Gradual Closure) (available upon request)
Wu Ning: Financial Verification of CFC Production for China in 2005- Annex III

Assisted and Accompanied By

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Inspection Mission Time Frame

February 8-22, 2006

Enterprises in Visitation Order

Zhejiang Juhua Fluoro-Chemcial Co. Ltd- Zhejiang Province, Quzhou City
Zhejiang Dongyang Chemical Plant - Zhejiang Province, Dongyang City
Zhejiang Linhai Limin Chemical Plant – Zhejiang Province, Linhai City
Zhejiang Chemical Research Institute (ZCRI) - Zhejiang Province, Hangzhou City
Jiangsu Changsu *3F Refrigerant Co. LTD - Jiangsu Province, Changshu City
Jiangsu Meilan Electro-chemical Co. LTD - Jiangsu Province, Taizhou City

*All World Bank documents spell as Changsu: while the true spelling is Changshu

Report Format and Contents

- Verification conclusions for CFC Production in China for 2005.
- Annex I - Text covering details of technical effort by Vogelsberg and Hua for the six CFC Enterprises visited and inspected.
- Annex II - CFC production verification tables for gradual closure for the six Enterprises. (Available upon request)
- Annex III - Financial verification of CFC Production for China in 2005

Verification Conclusions with respect to China's CFC Production in 2005

There was no complete closure project in China CFC Production Sector 2005, therefore, there were six enterprises producing CFC products in China 2005, the same as in 2004. The verified overall national production of CFCs in 2005 is 18,720.48 tonnes (ODP). The following table is the breakdown in accordance with various product types: The product stock summaries for the six CFC producers in 2005 are shown in this table..

Type of CFC Product	Number of Producers	Total Production		Total Producer's Stock in 2005 (MT)		
		ODS (MT)	ODP(tonnes)	Opening	Closing	Change
CFC-11	3	8,294.383	8,294.383	697.67	1,136.93	+ 439.27
CFC-12	4	9,714.055	9,714.055	2,459.31	2,045.67	- 413.64
CFC-13	1	20.292	20.292	0.315	8.731	+ 8.416
CFC-113	1	686.630	549.304	837.39	589.52	- 247.87
CFC-114	1	10.995	10.995	22.93	8.10	- 14.83
CFC-115	2	219.097	131.458	68.83	63.30	- 5.53
Total National Production			18,720.487			

The targeted limit for total CFC production in 2005 was 18,750 ODP tonnes as specified in the Agreement. Therefore the verified total actual CFC production in 2005 is 29.513 ODP tonnes lower than the targeted limit.

The CTC Consumption for overall national CFC Production in 2003 is summarized in the following table:

CTC used for	Amount CTC (MT)
Direct consumption for CFC-11 production	10,072.89
Direct consumption for CFC-12 production	13,312.23
Direct consumption, subtotal for CFC-11 & 12	23,385.12
Indirect consumption for CFC-13 production	79.7
Overall national CTC consumption for CFC Production in 2005 (including CFC 11,12 & 13)	23,464.82

The total consumption of CTC for the production of 8,294.38 MT of CFC-11 product is 10,072.89 MT; and the overall average CTC/ CFC-11 ratio is 1.214 (theoretical 1.12). Among the three CFC-11 producers, the producer that had the lowest CTC/ CFC-11 ratio (1.194) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest ratio (1.303) is Jiangsu Meilan Chemical Co. Ltd (SRI# A 8).

The total consumption of HF for the production of 8,294.38 MT of CFC-11 product is 1,296.38 MT; and the overall average HF/ CFC-11 ratio is 0.156 (theoretical 0.145). Among the three CFC-11 producers, the producer that had the lowest HF/ CFC-11 ratio (0.150) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest ratio (0.183) is Jiangsu Meilan Chemical Co. Ltd.(SRI# A 8).

The total consumption of CTC for the production of 9,714.05 MT of CFC-12 product is 13,312.23 MT; and the overall average CTC/ CFC-12 ratio is 1.370 (theoretical 1.272). Among the four CFC-12 producers, the producer that had the lowest CTC/ CFC-12 ratio (1.325) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest (1.415) is Jiangsu Meilan Chemical Co. Ltd.(SRI# A 8).

The total consumption of HF for the production of 9,714.05 MT of CFC-12 product is 3,761.31 MT; and the overall average HF/ CFC-12 ratio is 0.387. Among the four CFC-12 producers, the producer that has the lowest HF/ CFC-12 ratio (0.366) is Zhejiang Juhua Fluoro-chemical Co. Ltd. (SRI # B 14) and the highest (0.451) is Zhejiang Dongyang Chemical Plant (SRI# B12).

A detailed summary of China CFC production in 2005 is attached in the next page.

All the verified monthly production data and raw material consumption data are recorded in the Annex II of this Report while the verification process as well as the assessment and findings are described in Annex I of this Report.

SUMMARY OF CHINA CFC PRODUCTION IN 2005

CFC-11

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CTC Consumption	HF Cons'ption	Ratio CTC/ CFC-11	Ratio HF/ CFC-11
A 8	Jiangsu Meilan Chemical Co. Ltd	676.250	676.250	880.84	123.78	1.303	0.183
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	4,950.558	4,950.558	5,912.73	742.65	1.194	0.150
B 14	Zhejiang Juhua Fluoro-chemical Co. Ltd.	2,667.575	2,667.575	3,279.32	429.95	1.229	0.161
	Overall	8,294.383	8,294.383	10,072.89	1,296.38	1.214	0.156

CFC-12

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CTC Consumption	HF Cons'ption	Ratio CTC/ CFC-12	Ratio HF/ CFC-12
A 8	Jiangsu Meilan Chemical Co. Ltd.	610.960	610.960	864.59	260.75	1.415	0.427
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	3,822.474	3,822.474	5,063.35	1,489.92	1.325	0.390
B 12	Zhejiang Dongyang Chemical Plant	898.195	898.195	1,267.93	405.29	1.412	0.451
B 14	Zhejiang Juhua Fluoro-chemical Co. Ltd.	4,382.426	4,382.426	6,116.36	1,605.35	1.396	0.366
	Overall	9,714.055	9,714.055	13,312.23	3,761.31	1.370	0.387

CFC-13

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-12 Conumption	Ratio CFC-12/CFC-13	Indirect CTC Cons'ption*	Indirect CTC/CFC-13 ratio*
B 8	Zhejiang Linhai Limin Chemical Plant	20.292	20.292	57.00	2.809	79.70	3.928

CFC-113

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	PCE Consumption	HF Cons'ption	Ratio PCE/ CFC-113	Ratio HF/ CFC-113
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	686.630	549.304	692.00	318.60	1.008	0.464

CFC-114

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-113a** Consumption	HF Cons'ption	Ratio CFC-113/ CFC-114	Ratio HF/ CFC-114
B-11	Zhejiang Chemical Research Institute	10.995	10.995	12.92	1.63	1.175	0.148

CFC-115

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-113** Consumption	HF Cons'ption	Ratio** CFC-113/ CFC-115	Ratio HF/ CFC-115
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	99.200	59.520	162.00	64.90	1.633	0.654
B-11	Zhejiang Chemical Research Institute	119.897	71.938	155.58	38.34	1.298	0.320
	Overall	219.097	131.458	317.58	103.24	1.450	0.471

* The indirect CTC consumptioon is the consumption for producing 57 MT CFC-12 in Zhejiang Juhua(B14) that used for Linhai Limin (B 8) to produce CFC-13.

** Since 2004 Zhejiang Chemical Research Institute uses CFC 113a as the raw material instead of CFC 113.

ANNEX I

Tuesday, February 9, 2006 - Zhejiang Juhua Fluoro-chemical Co. LTD

12,000 TPA CFC-11 & CFC-12 – Single Plant
15,000 TPA AHF
115,000 TPA Chloromethanes – nominal 20,000 TPA CTC
(Expanded from 70,000 TPA by 45,000 TPA in 2004)

General

The team last visited Juhua January 25, 2005. There have not been any significant changes in the CFC, AHF or Chloromethanes plants during 2005.

Verification of Year 2005 CFC-11/12 Data

Juhua have contained to improve their records to facilitate easy verification of all raw material and CFC production/sales/inventory data. The key to the basic data records are the transfer slips that are generated for each movement of CTC, AHF and CFCs between raw material supply tanks and the CFC production unit as well as daily records for packaging of drums, DACs, cylinders or bulk shipping containers. A daily record is kept that shows three sets of key data on a single sheet; a) amount of CFCs packaged by package size, b) number of packaged containers transferred to sales warehouse and c) the remaining packages in the production warehouse.

They have set up Excel spreadsheets to tabulate every daily transaction with monthly totals for each month. The individual transfer slips are verified against these spreadsheets. We proved 100% agreement on all data records for CFC11/12 production in 2005.

We checked the finished CFC product receiver levels for the start and beginning of 2005 to ensure all new production was accounted for with year-end figures slightly lower than year beginning values, hence no problem.

Juhua is the sole supplier of CFC-12 feed stock to Linhai Limin for their conversion to CFC-13; again these records were in order.

Daily packaging records are not a viable check on daily CFC production since they package to meet inventory and sales requirements. Their bulk tanks are capable of inventorying 240 M^3 of CFC-11 and 700^3 of CFC-12, well in excess of a month's production while their shift receivers can accommodate four days production. However, we were able to do a full year's balance of a) Yr. 2005 CFC-12 packaged production, b) CFC-12 yr. beginning packaged inventory in the production unit, c) yr. ending packaged inventory for CFC-12 and d) yearly transfers (by adding all monthly data) of packaged goods from the production to the sales warehouse. Considering that these are tens of thousands of packages involved we were pleasantly surprised to find a perfect balance for these data.

Juhua now generates a single page document showing each plant outage and cause of outage; using this we verified 2005 plant utilization at 320 days. We spot-checked some monthly plant log sheets to verify accuracy of this record; all were in orders.

The Accountant team member verified all AHF purchases to augment total plant requirements as well as CFC-11/12 sales to domestic customers. All CFC exports were verified against customs declassification documents.

All Juhua 2005 CFC production data was found to be accurate as reported to SEPA.

Saturday, February 11 – Zhejiang Dongyang Chemical Plant

5,000 TPA CFC-12
20,000 TPA HCFC-22 (expanded from 8,000)
25,000 TPA AHF (expanded from 20,000)

General

This is the team's seventh visit to Dongyang Chemical. Addition of a 2nd HCFC-22 line and capacity ream out of the AHF plant occurred in 2004. No changes in 2005.

Verification of Year 2005 Data

This continues to be one of the easiest plants for data verification because of the plant's single product line and multiple records that can be cross-checked.

We examined all CFC-12 filling log sheets for filling of DAC's and cylinders for each day and month and all matched reported production.

We then checked CFC-12 production transfer slips against the above log sheets and found 100% accuracy.

They also create a daily total site balance sheet from the above mentioned records showing: starting CFC-12 inventory, production, transfers to warehouse, CFC-12 sales, and end of day inventory. This record is signed by the site supervisor, warehouse foreman and production supervisor. Using these daily balance sheets they also prepare a monthly balance sheet. This reflects monthly total figures but not used by us for verification.

CTC starting inventory, transfers into the CFC-12 plant, daily CTC use and ending CTC inventory for each day are kept in a bound notebook. The daily consumption figures are also kept as a monthly cumulative figure. We examined all entries for each month and found total agreement with the figures reported to SEPA.

The plant log sheets record daily and cumulative AHF feed values and these figures closely match the official inventory adjusted figures. AHF is transferred via an electronic weigh tank from the plant's AHF production unit.

All daily and monthly transfers of AHF were verified correct as reported to SEPA.

Dongyang's operating day figures have always proven to be very accurate as they keep a daily record showing exactly how many hours raw material feeds were going to the two reactors, hence, their monthly operating days will typically show fractional days. As noted in the past Dongyang and the region are faced with an electrical power shortage and the CFC plant's refrigeration is a significant load, hence they prefer to operate at low rates for longer periods as opposed to starting and stopping and setting higher peak power loads. Their operating days in 2005 were 149.5 vs 223 in 2004, 319 in 2003 and 239 in 2002. This 5,000 TPA plant produced 898.2 MT vs their 2005 quota of 900 MT 18% of their capacity.

Dongyang began 2005 CFC-12 plant operating in March and shutdown from early August until late November. They only operated 6 days in their November accounting period and CTC yield, was very poor. As explained to us it was the result of several leaks during startup after the prolonged shutdown. This slightly impacted their yearly CTC ratio and yields vs prior year performance; 90.0% CTC yield in 2005 vs. 90.7% in 2004. Their export sales of 423.4 MT is comparable to recent historical levels of 292.6 MT in 2004, 801 MT in 2003 and 455 MT in 2002. Total 2005 sales of 1,165 MT reduced their inventories by 260 MT to an ending CFC-12 inventory of 380 MT.

The Team is satisfied that Dongyang's 2005 CFC-12 production and CTC plus HF consumption are correct as reported to SEPA.

Sunday, February 12 – Zhejiang Linhai Limin Chemical

100 TPA CFC-13
26,000 TPA HCFC-22 (10,000+ two 8,000 MT Units)

General

Several years ago the city government told Linhai Limin that they must plan on stopping chemical manufacturing at this plant site since it reside in a residential area. In 2004 they built a 10,000 MT HCFC-22 plant at a new site about 25 minutes from this location. Limin was advised that all chemical manufacture must cease by year end 2005 at this old site.

One of the 8,000MT HCFC-22 units was relocated to the new site during 2005 and parts of the 2nd 8,000 MT unit were also relocated and combined with some new equipment to establish the 2nd 8,000 MT unit at the new site. The old HCFC-22 structures are stripped bare of equipment, but tankage still exists on the old site.

The CFC-13 plant was moved to the new site in September of 2005 utilizeing the old distillation system combined with a new reactor and piping; which had developed serious leaks causing poor yields in May, July and September of 2005.

The existing site will be kept for prospective non-chemical activity in the future.

Verification of 2005 CFC-13 Data

Limin purchases feedstock CFC-12 from Juhua using a government issued permit restricting 2005 purchases to 57 MT. Four CFC-12 procurements were made from Juhua for feedstock use. Limin continues to purchase CFC-12 on the open market to meet loyal customer's needs. All these CFC-12 purchases were verified by the Team's Accounting member.

CFC-12 feedstock consumption is recorded for each shift on a shift log sheet. The Accounting office copies these shift consumption figures to a daily record showing cumulative CFC-12 feedstock consumption in addition to the total daily use. The daily and monthly totals were checked for all operating months and found to be accurate.

The above mentioned plant log sheets were also used to verify the number of operating days. One day adjustments were made in two months since CFC-12 feed was discontinued for 1-2 shifts in some days. Year 2005 operating days totaled 177.

All CFC-13 product is typically packaged into 8 and 35 kg cylinders. We examined all cylinder filling records and corresponding transfer slips from production to the warehouse and found reported production of 20.29 MT of CFC-13 to be correct and slightly less than there 20.35 MT quota.

We explored the reasons for very poor CFC-12/CFC-13 ratios in May, July and September. In July there were reactor leaks that went undetected for a few days. June was back to normal but in a short run in July they again experienced poor performance that they were unable to pinpoint until they restarted in September. At this time they determined that there were pinhole leaks in some piping that were difficult to detect because of insulation covering the piping (in our opinion the use of a halide leak detector would have found such leaks as this is common practice in refrigeration service). At this point they decided to shutdown the old unit and remove the distillation system to the new plant site and combine it with a new reactor system.

Monday, February 13 – Zhejiang Chemical Industry Research Institute (ZCRI)

150 TPA CFC-114/115

General

ZCRI have switched from CFC-113 to CFC-113a as feedstock, which they produce in part as well as purchase from Changshu 3-F. This satisfies China's solvent sector plan which limits use of purchased CFC-113 as feedstock, as well as provides improved yields to CFC-114 and CFC-115.

While ZCRI did not produce any CFC-114 in 2004 (used their quota to increase CFC-115 production in 2004) they used their entire eleven ODP tonnes CFC-114 quota in 2005 to meet the much higher 2005 sales demand (25.2 MT) and ensure some year end 2005 inventory.

Verification of Year 2005 CFC-114/115 Data

CFC-114

ZCRI produced CFC-114 for two months in 2005 fulfilling their 11 ODP tonnes quota. Verification was done by checking cylinder filling records as well as cylinder transfer slips from production to the warehouse. Cylinder filling records show a) cylinder I.D. number, b) gross wt. c) net wt. d) tare wt. and e) person filling the cylinders. They produced four cylinders in June and five in July. Both sets of records were verified as correct.

CFC-115

ZCRI produced their entire 72 ODP tonnes (120 MT) quota of CFC-115 in seven months; March thru September, a total of 197 operating days (spent eight days in February heating equipment and establishing feeds and inventory levels before actual production occurred in March).

Cylinders filling records and transfer slips are identical to those used for CFC-114, and all seven month's CFC-115 data were checked and found to be correct.

CFC-113a and AHF Feed Stock Consumptions

Raw material consumption for the individual CFC products is allocated by molar ratio since CFC-114 and CFC-115 are co-produced.

CFC-113a receipts from the warehouse document transfers to the CFC production plant. Unused CFC-113A is transferred back to the warehouse by a paper transaction at month end so that monthly consumption is the net transferred. All data was verified as correct.

AHF used by CFC-114 and CFC-115 is separated from other plant uses of AHF. Similar documentation to CFC-113a is used for AHF. All transfers were verified as correct as well as the reported AHF consumption figures.

Our Accountant Team member worked independently of our plant verification effort in ZCRI's Accounting facilities at a different location.

We were satisfied that ZCRI are in full compliance with their 2005 CFC production commitments.

February 14 -16 – Jiangsu Changsu 3F Refrigerant Co. Ltd.

10,000 TPA CFC-11
5,000 TPA CFC-12
4,000 TPA CFC-113
400 TPA CFC-115
15,000 TPA AHF (single line new plant)

General

Changshu 3-F has started up a new single line 15,000 TPA AHF line at their new Fluorocarbon plant site that supports their alternative fluorocarbon facilities. When the remaining CFC facilities are closed in 2007 at the existing refrigerant site, it will become primarily a fine chemical plant.

Verification of Year 2005 CFC Production Data

CFC-11

The CFC-11 plant operated eleven months (285 days) and was down by early December having produced 4950.56 MT vs. their 4951 MT quota in 2005.

Verified monthly and yearly production to be correct as reported to SEPA, by examining all drum filling records and transfer slips documenting movement from production to the warehouse. The transfer slips are in bound pads where the copy and original remain in the pad. In addition they prepare a container filling slip, a slip documenting transfer of filled containers to the warehouse and receipt of these containers by the warehouse. This year we checked the three transfer receipts and found them to be 100% accurate.

CTC for CFC-11 is via pipeline from the warehouse bulk storage into one of two level tanks which in turn feed the four (4) CFC-11 reactor feed tanks. All pipeline transfers are recorded in a bound notebook and transfer slips created for each transfer into the production unit. All CTC transactions were verified to have been accurately reported.

HF for CFC-11 is transferred via pipeline into the weigh tanks where typical transfers are increments of 1 MT. All monthly transfers were checked and found to be accurate. Examined January CFC-11 reactor logs and all were properly filled out and supported reported operating days. (There were only 14 hours all month when both reactors were without feeds for minor problems)

CFC-12

The CFC-12 plant operated 334 days over twelve months, producing 3,822.47 MT vs. their 3,823 MT quota in 2005. The year's campaign was finished by early December.

The CTC, AHF and CFC-12 records and transfer slips are identical to the CFC-11 plant and as with CFC-11 we chose to verify CFC-12 production by checking the set of 3 transfer slips. We note they still have cylinder filling records recorded in a bound note pad. These slips show serial number, tare weight and net weight. There are usually one - two such slips per day depending upon the number of packaged units. When filling DAC's they record weight by lots in increments of 5; i.e. 40, 45, 50 etc. Totals from these filling records are entered into the daily transfer slips.

HF for CFC-12 is via pipeline into two parallel weight tanks and are typically in 1 – 1.1 MT increments. All HF transfer slips were added for each month and agreed with reported totals. At shutdown of the old AHF facilities they discovered 12 MT of excess stock; this was transferred to the CFC-12 plant at no charge and gave them a better than theoretical ratio in June; the month when adjustment was made.

CTC consumed for CFC-12 production was verified by adding all transfer slips for each month. At month end they misread the CTC level figures in February, May and June; under reporting CTC use. The error was discovered late in 2005 and corrected by adding the under reported CTC amount to December. This distorted the respective CTC ratios for these four months, but the annual ratio is correct. Examined December reactor log sheets for CFC-12 and confirmed at least one reactor (out of two) operated each of the 17 days before shutdown.

CFC-113

Since 2005 was last year for CFC-113 production and they only operated two months to produce 686.63 MT against their 687.5 MT (550 ODP tonnes) quota, a total of 51 days. The plant was shutdown February 24, 2005 for its final time.

We examined all plant shift log sheets for the 51 days of operation and found only 9½ hours of time when feeds were not on one of the 2 reactors; hence reported operating days were verified as correct.

Verified CFC-113 drum filling records and transfer slips as accurately reported.

PCE is imported via drums and bulk into bulk storage, then transferred via level tank readings to the CFC-113 plant. Transfers and consumption figures were verified as accurately reported. We found an entry error (440 kg too low) in the bound notebook, but transfer slips and Financial records were correct.

HF transfers are via pipeline from plant bulk storage. Documentation is identical to other CFC operations. All transfer and consumption data were verified as correctly reported.

CFC-113 Plant Closure

Plant Closure Project will be in next year's report, however, the plant has been dismantled and we viewed the plant and reviewed photos provided to SEPA. They are already using the vacated building to expand the adjacent CFC-113a & CTFE facilities.

CFC-115 Verification

CFC-115 cylinders are typically filled to 500kg exact weights making verification easy. They operated only four months or 114 days with shutdown April 21st until year end. They produced 99.2 MT of CFC-115 vs quota 60 ODP tonnes (100 actual MT).

Beginning in 2004 CFC-113 produced from their original CFC-113 unit was for solvent sales and process agent use only. Feed stock for CFC-115 and other site CFC based products was supplied from their new CFC-113/CFC-113a/CTFE unit.

Monthly cylinder filling records for CFC-115 were examined for each month and reported figures were correct as reported.

CFC-113 is transferred from the new CFC-113/CFC-113a unit to CFC-115 plant via a 5 m^3 portable tank transported by forklift. Transfer quantities are typically 3.5 MT and all monthly transfer and consumption figures were verified as accurately reported.

AHF is supplied in cylinders, typically exact 400kg quantities. All transfer and consumption figures were verified as accurately reported.

Thursday, February 3 – Jiangsu Meilan Chemical Co. Ltd.

3,000 TPA CFC-11
3,000 TPA CFC-12
40,000 TPA HCFC-22
16,000 TPA AHF
130,000 TPA Chloromethanes (CMs)

General

Last year's report mentioned that Meilan were developing a modest temperature catalytic process to convert future excess CTC in the presence of methanol to form methyl chloride, CO_2 and HCl. They retrofitted their original 30,000 TPA CMs plant to apply this technology. The plant ha operated technically successfully over the past six months and the capacity achieved conversion of 8,000 TPA of CTC.

They are constructing a new 100,000 TPA CMs plant along with their existing 50,000 and 80,000 TPA CMs plants.

Verification of 2005 Production Data

CFC-11

They produced CFC-11 four (4) months, March, April, May, and December; operating only 55 days while producing 676.25 MT vs. their 677 MT quota. This year's production was increased from 642.56 MT in 2004 when their quota was 643 MT, as their CFC-12 production was significantly reduced.

Based on prior year's experience we used the CFC-11 plant distillation (shift) log sheets as the primary verification document, adding each shift's production for each month. All log sheet figures were verified to match reported monthly figures. We cross-checked transfer slips from production to the warehouse as well as checked drum filling records, which are recorded in a bound notebook; all checked to be correct. Drums are all 250 kg and there usually are no bulk shipments.

CTC is transferred via pipeline to two day tanks and then to two sets of feed tanks for use in either the CFC-11 or CFC-12 plants. A transfer slip is generated for each transfer and all were verified as accurate. A paper accounting transfer back to the CTC warehouse occurs at month-end and is reversed at the beginning of the next month. Thus the net transfer figure is the CTC consumed in the month. The plant log sheets also show CTC consumption for each shift and we added these figure for each of the four months and found agreement to official figures.

AHF is transferred via pipeline to a weigh tank then to the process. A transfer slip is created for each transfer. We also added shift consumption figures and then cross checked transfer slips. All monthly transfers were correct.

CFC-11 domestic sales in 2005 at 595 MT were down from 952 MT in 2004. No exports in 2005.

CFC-12

Meilan typically package all CFC-12 into returnable cylinders, no DAC's. However, they did fill a couple of tank trucks in 2005. Cylinder sizes in 2004 were 400, 450, 500, 1000, 500 and 1100 kg.

All cylinder fillings are recorded in detailed log sheets, which we added up for each month and adjusted for starting and ending bulk stocks. The net figure matched annual production exactly. They fill cylinders most months but only operated three months; hence, monthly cylinder filling records are not used to determine monthly production. We verified individual monthly production by adding up each shifts' production from the distillation log sheets; all figures were verified as accurately reported.

They operated only 68 days in approximately three to four week campaigns producing 610.96 MT vs. their 612 MT quota; down from their 1240 MT quota in 2004. CFC-12 domestic sales were 732 MT, exceeding production by 121 MT.

As discussed in the CFC-11 section CTC and AHF transfers are handled identically in both plants. All CTC and HF figures were verified as correctly reported.

Meilan continues to be one of the easiest plants to verify, as their records are very complete.

Annex III

Financial Verification
of
CFC production in China in 2005

1. From February 8th to 22nd, 2006, a mission comprising Messrs. Tony Vogelsberg (team leader/technical expert), Hua Zhangxi (HZX, technical expert), and Wu Ning (financial consultant) to carry out the verification of CFC production in China in 2005 in accordance with the CFC Production Sector 2005 annual programme. The mission was accompanied by the representative from State Environmental Protection Agency (SEPA). The mission visited the following plants/company/institute:

(i) Zhejiang Juhua Fluoro-Chemical Co. Ltd. (CFC 11, CFC 12),
(ii) Zhejiang Dongyang Chemical Plant (CFC 12),
(iii) Zhejiang Linhai Limin Chemical Plant (CFC 13),
(iv) Zhejiang Chemical Industry Research Institute (CFC 114, CFC 115),
(v) Jiangsu Changshu Ref. Plant-Changshu 3F (CFC11, CFC12, CFC113 & CFC115), and
(vi) Jiangsu Meilan Electro-Chemical Plant. (CFC 11, CFC 12).

2. Based on the experience gained from previous verifications, the mission split into a technical group and a financial group and held separate discussions with each CFC production plant/company/institute concurrently during the verification. This report only covers the financial verification of each CFC production plant/company/institute, which follows the Guidelines and Standard Format for Verification of ODS Production Phase-out[1] (Guidelines).

3. In addition to the Guidelines, the financial verification was done under the following assumptions due to the tight schedule of the mission agreed by Ms. Helen Chan, Task Team Leader, EASEN, the World Bank:

(i) The plants/company/institute understood the importance of this verification, and
(ii) The plants/company/institute provided completed documents and information needed for this verification.

4. Like the verification in 2005, this verification exercise was conducted ahead of the annual national audit of the CFC production sector by China National Audit Office (CNAO). The mission had no CNAO's documentation and reporting as reference to follow. Therefore, necessary financial records and original documents covering the following aspects were checked:

(i) Production of each CFC,
(ii) Procurement and production of raw materials for CFC production (including CTC, AHF, CFC12, CFC 113a, and PCE), and
(iii) Consumption of raw materials (including CTC, AHF, CFC 113a, CFC 12, and PCE).

5. Before the verification, each plant/company/institute filled in questionnaires and submitted them to HZX through SEPA. Necessary clarifications were requested by HZX and feedbacks were given by relevant plants/company/institute.

6. The findings of financial verification are summarized as follows:

- **Zhejiang Juhua Fluoro-Chemical Co. Ltd. (CFC 11, CFC 12)**

7. Zhejiang Juhua Fluoro-Chemical Co. Ltd. (Juhua) was verified on February 9, 2006.

8. Juhua produced CFC 11 and CFC 12 in 2005. CFC 11 and CFC 12 are produced by the No. 3 workshop of Juhau. The production of CFC 11 and CFC 12 was entered into the ERP system and automatically transferred to accounting system. By the end of each month, No. 3 workshop prepared and submitted its monthly *Raw Material*

[1] UNDP/Ozl.Pro/Excom/32/33 of October 24, 2000, adopted as Decision 32/70 at the 32nd Excom Meeting.

Consumption Calculation Report to the accounting office of Juhua based on its daily records. This report provided the information for CFC 11 and CFC 12 production, beginning stocks of AHF and CTC, consumption of AHF and CCL_4, and closing stocks of AHF and CTC. This report was used to check the accuracy of the ERP system. During the verification, the data in the report were reconciled with Juhua's accounting records and the data reported to SEPA by Juhua before the verification. It is concluded that the accounting records reflect the production of CFC 11 and CFC 12 in Juhua. The following table shows the production of CFC 11 and CFC 12 produced by Juhua from 2000 to 2005:

CFC 11 and CFC 12 Productions by Juhua from 2000 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 11	4,338.8	4,826.3	4,489.0	3,947.5	3,325.1	2,667.6
CFC 12	7,758.7	7,706.3	7,157.0	7,406.0	6,232.8	4,382.4

9. In addition to producing CFC 12 as commodity, Juhau also produced CFC 12 for Zhejiang Linhai Limin Chemical Plant (Linhai) as feedstock for CFC 13 production. The following table presents the CFC 12 production for Linhai.

CFC 12 Production for Linhai as Feedstock of CFC 13 (MT)

	2003	2004	2005
CFC 12 as Feedstock of CFC 13 for Linhai	58.0	56.6	57.0

10. In 2005, CFC 11 and CFC 12 produced by Juhua were sold not only in domestic market, but also in overseas markets. CFC 11 was exported to Russia, Indonesia, and United Arab Emirates while CFC 12 was exported to Indonesia, Vietnam, Malaysia, Russia, Bengal, Iran, Philippines, and Egypt. All exports were licensed by the SEPA Import/Export Office.

11. Juhua produced their required CTC for its CFC production in 2005 and produced and purchased their AHF. In 2005, Juhua added 9,482.14 MT of CTC and 2,053.88 MT of AHF for CFC 11 and CFC 12 production. The addition of CTC and AHF for CFC 11 and CFC 12 production was entered into the ERP system and automatically transferred to accounting system. The consumption of CTC and AHF for CFC 11 and CFC 12 production was manually calculated and then entered into the ERP system by No. 3 workshop. The consumption data was transferred to accounting system. The following table shows CTC and AHF consumed by CFC 11 and CFC 12 production in 2005:

CTC and AHF Consumed by CFC 11 and CFC 12 Productions in Juhua in 2005

Consumed by	CTC	AHF
CFC 11	3,279.32 MT	429.95 MT
CFC 12	6,116.36 MT	1,605.35 MT
Total	9,395.68 MT	2,035.30 MT

- **Zhejiang Dongyang Chemical Plant (CFC 12)**

12. Zhejiang Dongyang Chemical Plant (Dongyang) was verified on February 11, 2006.

13. Dongyang produced CFC 12 in 2005. By the end of each month, the CFC 12 production unit in Dongyang submitted its Production Transfer Slips to the accounting office. These slips were signed by the CFC 12 production unit. These slips indicated the production of CFC 12 every day and became the supporting documents for accounting records. All of these Production Acceptance Slips were verified and it is concluded that the accounting records are consistent with the data reported to SEPA by Dongyang before the verification. The following table shows the production of CFC 12 by Dongyang since 2000.

CFC 12 Productions by Dongyang from 2002 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 12	2,218.3	2,218.8	1,740.7	1,442.2	1,213.1	898.2

14. The overseas markets of CFC 12 produced by Dongyang in 2005 included Bengal, Indonesia, Nigeria,

Saudi Arabia, Thailand, and Vietnam. The exports of CFC 12 were made by Dongyang itself. All exports were licensed by the SEPA Import/Export Office. Each shipment had its separate license.

15. During the verification, the purchased and consumption of CTC was verified. The accounting records were supported by the Raw Material Transfer Slips for CTC purchase and by the Raw Material Delivery Slips for CTC consumption. All these slips were reconciled with the data reported to SEPA by Dongyang before the verification and the results are satisfactory. However, the quantity of CTC purchase did not include the compensation to the transportation losses given by one of its CTC suppliers[2]. In 2005, Dongyang produced all AHF for its CFC 12 production. The consumption of AHF for CFC 12 production in 2005 was documented on HF Allocation Slips and the slips were verified. From the point of view of accounting, the quantity of AHF consumption was the quantity of AHF added to CFC 12 production. The following table gives consumption of CTC and AHF for production of CFC 12 by Dongyang.

CTC and AHF Consumed by CFC 12 Production in Dongyang in 2005

Consumed by	CTC	AHF
CFC 12	1,267.93 MT	405.29 MT

16. In 2005, Dongyang sold 0.7 MT of CTC to one company as a cleaning agent. This is not legal and they realized after the fact that this is the case; and will no longer do it.

- **Zhejiang Linhai Limin Chemical Plant (CFC 13)**

17. Zhejiang Linhai Limin Chemical Plant (Linhai) was verified on February 12, 2006.

18. Linhai produced CFC 13 in 2005. CFC 12 production facilities were dismantled in 2002. Therefore, Linhai purchased CFC 12 as feedstock for CFC 13 from Juhua. The accounting records of CFC 13 production in 2005 were supported by the Warehouse Acceptance Slips. The figures on these slips were consistent with the data reported to SEPA by Linhai before the verification. The following table shows the production of CFC 12 and CFC13 by Linhai since 2000.

CFC 12 and CFC 13 Productions by Linhai from 2000 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 12	1,364.8	1,364.9	961.6	0	0	0
CFC 13	27.0	27.0	27.0	21.3	20.8	20.3

19. In 2005, Limin exported 350 kg of CFC 13 to Israel, together with export of CFC 23.

20. Since the production facilities of CFC 12 were dismantled in 2002, the production quota of CFC 12 by Linhai was reallocated to Juhua by Chinese Government. Therefore, the production of CFC 12 for Linhai by Juhua is treated as feedstock of Linhai. Linhai in 2005 purchased 57 MT of CFC 12 as feedstock for CFC 13, which were supported by the Material Acceptance Slips. However, only 54 MT of CFC 12 was delivered to Linhai since the last 3 MT of CFC 12 was purchased on the last date of 2005, which was included in the purchase of CFC 12 in 2006.

21. In addition to the feedstock of CFC 12, Linhai also purchase 147.22 MT of CFC 12 as commodity. 3 MT of CFC12 was used as feedstock to produce CFC 13 instead of one from Juhua. The consumption of CFC 12 for CFC 13 production was verified and the result is satisfactory.

22. Linhai also exported 81.2384 MT of CFC 12 in 2005, including 49.9584 MT to Israel and 31.28 MT to Egypt (recovered or recycled from returned cylinders).

- **Zhejiang Chemical Industry Research Institute (CFC 114, CFC 115)**

23. Zhejiang Chemical Industry Research Institute (Zhejiang Chemical) was verified on February 13, 2006.

[2] This compensation to transportation losses (6.73 MT) was verified by CTC Verification Team in January 2006.

24. Zhejiang Chemical produced CFC 114 and CFC 115 in 2005. The production of CFC 114 was reflected in the Product transfer Slips, and the production of CFC 115 was reflected in the Semi-product transfer Slips, both were delivered to the accounting office in Zhejiang Chemical by the end of each month. The following table shows CFC 114 and CFC 115 production by Zhejiang Chemical from 2000 to 2005.

CFC 114 and CFC 115 Productions by Zhejiang Chemical from 2000 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 114	7.3	6.8	29.0	0	0	11.0
CFC 115	119.6	127.0	90.0	131.8	138.3	120.0

25. About half of the sales of CFC 114 produced by Zhejiang Chemical were sold in domestic market in 2005 and another half of sales were to Egypt, Argentina, and Kuwait. In 2005 most of CFC115 produced by Zhejiang Chemical was blended to R502 in 2005 and only 5.7536 MT of CFC 115 were sold, including 3.84 MT to Egypt.

26. Zhejiang Chemical in 2005 produced 1,157.763 MT of CFC 113a and purchased 168.5 MT from Changshu 3F. It also purchased AHF in 2005. The portion of CFC 113a and AHF transferred to produce CFC 114 and CFC 115 were documented on Material Delivery Slips. These Slips were delivered to the accounting office in Zhejiang Chemical by the end of each month for financial records. The verified consumptions of CFC 113a and AHF were shown in the following table.

CFC 113a and AHF Consumption by CFC 114 and CFC 115 in Zhejiang Chemical in 2005

Consumed by	CFC 113a	AHF
CFC 115	168.5 MT	40.0 MT

- **Jiangsu Changshu Ref. Plant-Changsu 3F (CFC11, CFC12, CFC113 & CFC115)**

27. Jiangsu Changshu Ref. Plant-Changsu 3F was verified from February 14 to 16, 2006.

28. Changshu 3F produced CFC 11, CFC 12, CFC 113, and CFC 115 in 2005. The productions workshops for CFC 11, CFC12, CFC113, and CFC 115 prepared the Monthly Production Reports based on daily records by the end of each month. These reports summarized the production of CFC 11, CFC 12, CFC 113, and CFC 115, and the consumption of CTC, AHF, CFC 113 and PCE. These reports were submitted to accounting office of Changshu 3F for financial records. The following table shows the production of CFC 11, CFC 12, CFC 113, and CFC 115 from 2000 to 2005.

CFC 11, CFC 12, CFC 113, and CFC 115 Productions by Changshu 3F from 2000 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 11	8,192.0	8,221.9	10,231.9	8,883.7	6,682.3	4,950.6
CFC 12	5,019.0	5,075.0	3,034.7	4,334.8	4,639.4	3,822.5
CFC 113	3,445.0	3,375.0	2,750.0	2,124.9	1,374.2	686.6
CFC 115	100.0	50.0	100.0	179.9	179.7	99.2

29. The production of CFC 113 only refers to the commodity.

30. In 2005, 101.9 MT of CFC 115 was blended to R502.

31. The overseas customers bought CFC 11, CFC 12, CFC 113, and CFC 115 from Changshu 3F in 2005 included Chile, Indonesia, United Arab Emirates, Korea, Philippines, Nigeria, Pakistan, Vietnam, Singapore, Bangladesh, USA (Du Pont), Malaysia, and the Netherlands (resold to Africa), etc.

32. Changshu 3F purchased CTC, AHF and PCE and also produced AHF in 2005. These purchases were supported by the Material transfer Slips issued by the warehouse. The production of AHF was documented by the Monthly Production Reports. The consumptions of CTC, AHF, CFC 113, and PCE were reflected in the Monthly Production Reports prepared by CFC production workshops. The verified consumption of CTC, AHF, CFC 113, and PCE are shown in the following table:

CTC, AHF, CFC 113 and PCE Consumed by Changshu 3F in 2005 for ODS Production

Consumed by	CTC	AHF	PCE	CFC113
CFC 11	5,912.7 MT	742.9 MT		
CFC 12	5,063.4 MT	1,489.9 MT		
CFC 113		318.6 MT	692.0 MT	
CFC 115		64.9 MT		162.0 MT
Total	10,976.1 MT	2,616.3 MT	692.0 MT	162.0 MT

- **Jiangsu Meilan Electro-Chemical Plant. (CFC 11, CFC 12)**

33. Jiangsu Meilan Electro-Chemical Plant (Meilan) was verified on February 17, 2006.

34. Meilan produced CFC 11 and CFC 12 in 2005. The Production Transfer Slips were prepared by CFC production unit at the end of each month before April 2005. From May 2005, the ERP system was launched in Meilan and all production data was entered into the ERP system by CFC production unit and then transferred to accounting system for financial records. The following table shows the verified production of CFC 11 and CFC 12 since 2000.

CFC 11 and CFC 12 Productions by Meilan from 2000 to 2005 (MT)

	2000	2001	2002	2003	2004	2005
CFC 11	1,049.8	1,049.7	1,049.7	997.1	642.6	676.3
CFC 12	1,793.0	1,792.9	1,314.7	1,066.0	1,238.7	611.0

35. In 2005 Meilan did not export any CFC 11 and CFC 12.

36. In 2005, Meilan produced all CTC for its CFC production. The total production of CTC by Meilan in 2005 was 4,320 MT and only transferred 766.6152 MT to produce CFC. Meilan also produced 8,095.2 MT of AHF and purchased 6,061.6 MT of AHF in 2005. The Material Transfer Slips issued by CFC production unit before April 2005 and the Material Consumption Records produced by ERP system after May 2005 reflected the consumption of CTC and AHF. The following table gives the consumption of CTC and AHF in 2005.

CTC and AHF Consumed by Meilan in 2005

Consumed by	CTC	AHF
CFC 11	808.8 MT	123.8 MT
CFC 12	864.6 MT	260.6 MT
Total	1,673.4 MT	384.4 MT

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