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执行蒙特利尔议定书
多边基金执行委员会
第四十四次会议
2004 年 11 月 29 日至 12 月 3 日，布拉格

项目提案：中国

本文件包括基金秘书处对下列项目提案的评论和建议：

泡沫塑料

- 逐步停止在聚氨酯泡沫塑料行业使用氟氯化碳的行业计划：2005 年度方案 — 世界银行

熏蒸剂

- 国家淘汰甲基溴（第二期） — 工发组织/意大利

哈龙

- 哈龙淘汰行业计划：2005 年度方案 — 世界银行

加工剂

- 逐步停止用作加工剂及其他未确定用途的四氯化碳的生产和消费（第一阶段）：2005 年度方案 — 世界银行

生产

- 氟氯化碳生产淘汰行业计划：2005 年度方案 — 世界银行

制冷

- 制冷维修行业氟氯化碳淘汰计划 工发组织/日本

溶剂

- 2003/2004 年溶剂行业淘汰消耗臭氧层物质计划执行情况进度报告和 2005 年度执行方案 开发计划署

项目评价表 - 多年期项目

国家：中国

项目名称	双边/执行机构
逐步停止在聚氨酯泡沫塑料行业使用氟氯化碳的行业计划：2005 年度方案	世界银行

国家协调机构：	国家环保总局/外经办

最新报告的项目所涉消耗臭氧层物质的消费数据

A: **第七条数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

氟氯化碳	22,808.80	

B: **国家方案行业数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

消耗臭氧层物质	泡沫塑料	制冷	气雾剂	溶剂	加工剂	烟草
氟氯化碳	15,348.00	10,745.26	2000.00	2,115.60	76.40	711.00

仍符合供资条件的氟氯化碳消费量（ODP 吨）	不适用

本年业务计划：供资总额 1082.7 万美元：总共淘汰 2500 ODP 吨。

项目数据		2004	2005	2006	2007	2008	2009	2010	**共计**
蒙特利尔议定书限额（氟氯化碳）		57819	28909	28909	8673	8673	8673	0	不适用
氟氯化碳-11	国家氟氯化碳-11 消费限额	13,100	10,400	7,700	4,130	3,800	300	0	不适用
	年度氟氯化碳-11 消费限额行业	11,666	9,646	7,164	3,821	3,553	102	0	不适用
	新解决的年度淘汰量	2,500	2,500	600	551	0	0	0	6,151
总共将淘汰的消耗臭氧层物质消费		2,500	2,500	600	551	0	0	0	10,651
原申请项目费用（美元）		10,903	10,903	3,320	2,676	1,767	1,767	0	53,846
最后项目费用（000 美元）：									
世界银行的资金		10,903	10,903	3,320	2,676	1,767	1,767	0	4,766.14
项目供资总额		10,903	10,903	3,320	2,676	1,767	1,767	0	
最后支助费用（000 美元）									
世界银行的支助费用		961.27	961.27	282.8	240.84	159.03	159.03	0	
支助费用总额		961.27	961.27	282.8	240.84	159.03	159.03	0	
项目向多边基金申请的总费用（美元）		11,864	11,864	3,603	2,917	1,926	1,926	0	
项目最终成本效益值 (美元/公斤)									不适用

资金申请：**核准如上所述**（2004 年）**第三期的供资。**

秘书处建议	**未提供**

项目说明

1. 世界银行提交 2005 年度执行方案，供执行委员会在其第四十四次会议上审议。文件分两部分：

(a) 2004 年度方案的执行情况（A 部分）

(b) 2005 年度执行方案（B 部分）

背景

2. 有关中国聚氨酯泡沫塑料行业氟氯化碳淘汰的协定于 2001 年 12 月在执行委员会第三十五次会议上获得核准，总费用为 5,384.6 万美元。淘汰计划提供了中国聚氨酯泡沫塑料行业氟氯化碳-11 消费的年度控制目标以及 2002-2009 年的相关供资。2001 年 12 月至 2002 年 12 月这一期间的第一个执行方案在第三十五次会议上获得核准，涵盖 2003 年的第二个执行方案和 2004 年的第三个执行方案分别在第三十八次会议和第四十一次会议上获得核准。向世界银行申请的总额 36,376,170 美元及 2,963,170 美元支助费用已分三期拨付，以淘汰 7,000 ODP 吨氟氯化碳-11。

3. 氟氯化碳控制目标及相关供资见下表 1。

表 1：中国聚氨酯泡沫塑料行业氟氯化碳-11 消费控制目标（ODP 吨）及相关供资时间表（千美元）

	2002	2003	2004	2005	2006	2007	2008	2009	2010	合计
年度国家氟氯化碳-11 消费限额（ODP 吨）	17,200	15,500	13,100	10,400	7,700	4,130	3,800	300	0	
聚氨酯泡沫塑料行业年度氟氯化碳-11 消费限额（ODP 吨）	14,143	13,830	11,666	9,646	7,164	3,821	3,553	102	0	
聚氨酯泡沫塑料行业年度氟氯化碳-11 淘汰目标（ODP 吨）	2,000	2,500	2,500	2,500	600	551				10,651
年度供资总额（美元×1,000）	9,940	12,570	10,903	10,903	3,320	2,676	1,767	1,767		53,846
方案支助费用（美元×1,000）	886.6	1,115.3	961.27	961.27	282.8	240.84	159.03	159.03		4,766.14
项目向多边基金申请的总费用（美元×1,000）	**10,826.6**	**13,685.3**	**11,864.27**	**11,864.27**	**3,602.8**	**2,916.84**	**1,926.03**	**1,926.03**		**58,612.14**

4. 资金发放的条件如下：

(a) 证实：

（一） 商定的上年度全部淘汰目标和消费限额均已实现；

（二） 经核证，上个年度的预期活动已根据年度执行方案开展；

（三） 氟氯化碳淘汰合同已签定，数额起码为本年度合同目标的 50%，以及上年度合同目标的 100%。

(b) 通过现场检查核证起码 15%的转换活动确认完成，至少占年度执行方案氟氯化碳消费的 15%；

(c) 根据协定提供的消费数字与中国按《蒙特利尔议定书》第七条提交臭氧秘书处的报告相一致。

5. 上文第 4（a）项的条件规定，应实现商定的上年度全部淘汰目标和消费限额。商定淘汰目标和消费限额是：

(a) 年度国家氟氯化碳-11 消费限额（ODP 吨）

(b) 聚氨酯泡沫塑料行业的年度氟氯化碳-11 消费限额（ODP 吨）

(c) 聚氨酯泡沫塑料行业的年度氟氯化碳-11 淘汰目标（ODP 吨）

限额列于上表 1。

6. 此外，执行委员会第 41/42 号决定请世界银行优先出台一项制度，令人满意地核查聚氨酯泡沫塑料行业的现有项目和新项目淘汰氟氯化碳的情况，以及该行业 2003 年及以后各年的年度氟氯化碳消费。这一申请与上述第 5（b）和（c）款有关。

2003 和 2004 年度方案执行情况报告

7. 世界银行最初提交了两份报告：泡沫塑料行业 2004 年度方案核查任务报告，以及 2005 年度方案——在中国泡沫塑料行业淘汰聚氨酯中的氟氯化碳-11。后来，这份报告由世界银行 2003 年度中国聚氨酯泡沫塑料行业核查总结报告补充。

(a) 泡沫塑料行业年度方案核查任务报告说明到抽查的待转产企业视察的结果，并证明这些企业符合要求。行业计划协定对样本的最少数量做出了规定。

(b) 年度方案包含 2002 至 2004 年执行情况报告，不仅提供了政策及政府行动、企业活动和技术援助等叙述性反映资料，而且提供了包含企业活动和项目执行情况、收集到的核查资料以及技术援助活动清单等数据的表格。

(c) 核查总结报告与第 41/42 号决定有关。报告提供有关生产行业现有核查的资料及相关数据。根据这些数据，将提出确定泡沫塑料行业国家氟氯化碳-11 消费的方法。此外，文件还提供数据说明其他行业的氟氯化碳-11 的进出口及消费情况。

8. 世界银行在预计淘汰量和已实现淘汰量方面在企业一级提供了关于项目情况的综合数据。数据包括小组一级的总数据，起始点是 2002 年度方案。

9. 根据 2003 年执行方案，现已实施六项技术援助活动，其中两项已完成。2004 年，规划实施六项活动，其中一项（绩效审计）已完成。

2005 年度执行方案

10. 根据 2005 年度方案，计划核准为中国提供 1,090.3 万美元，并为世界银行提供 961,270 美元，作为支助费用。中国应达到 10,400 ODP 吨氟氯化碳-11 的国家消费限额，聚氨酯泡沫塑料行业消费限额为 9,646 ODP 吨，聚氨酯泡沫塑料行业的淘汰目标为 2,500 ODP 吨。

11. 2005 年度方案的方案活动包括政策和政府行动以及企业活动和技术援助。政策和政府行动将侧重六项主要活动，这些活动对中国完全淘汰氟氯化碳-11 的成功是必要的。与上个年度方案注意到的内容相同，很多政策和管制措施已生效多年，并且将继续生效或使之更有效力。其中包括执行一项禁令，有关内容有：氟氯化碳-11 泡沫塑料生产设施的新结构；氟氯化碳-11 的生产控制；以及消耗臭氧层物质的进出口管制。此外，政府提议投资发展替代物和体制建设。

12. 国家环境保护总局将在企业一级确定聚氨酯泡沫塑料企业，以实现 2,500 吨的淘汰目标。将由国家环境保护总局确定 5-6 个大型区域项目实现这一点。预计到 2005 年中期将签署起码 50%的减少氟氯化碳-11 合同，并且在不迟于 2005 年底签署另外 50%的合同。

13. 现已预见六项技术援助活动，包括 2004 年绩效审计、执行淘汰活动所涉人员的培训以及第三阶段标准拟定和修订。技术援助活动包括 2004 年绩效审计，按照该审计，审计员的培训计划在 2005 年第一季度商定工作范围后在第二季度进行。

秘书处的评论和建议

评论

14. 世界银行代表中国于 2003 年向基金秘书处报告氟氯化碳-11 的消费量为 13,994 吨，其中，泡沫塑料行业消费 11,423 ODP 吨。这些消费数字在 2003 年国家和泡沫塑料行业消费限额 15,500 ODP 吨及中国同意的 13,830 ODP 吨范围之内。

15. 应当注意到，中国决定将不同生产和消费行业分别列入单独协定，尽管它有机会考虑将所有与氟氯化碳消费有关的活动合并到一个国家淘汰协定。这种分割使协定的监测、报告及核查比国家淘汰计划更难进行。此外，中国还决定选择若干执行机构执行这些协定。在这种情形下，为保证透明度和问责制，不可避免地要求不同行业编制针对行业的数据，说明特定行业的消耗臭氧层物质消费及淘汰对相关行业产生的影响。

16. 下述各段详细回顾执行委员会要求的数据以及世界银行和中国提供的数据。

17. 世界银行提供了“世界银行 2003 年中国聚氨酯泡沫塑料行业核查总结报告”。为了计算中国氟氯化碳-11 的消费，世界银行建议制定一种依据生产行业协定规定的氟氯化碳-11 生产核查的制度。世界银行进一步提供了氟氯化碳-11 进出口数字，国家环境保护总局消耗臭氧层物质进出口办公室报告了这一数字。这些数字见表 2：

表 2：2003 年国家氟氯化碳-11 消费总量

2003 年	协定中的氟氯化碳-11 生产/消费	实际生产/消费数据	核查
氟氯化碳-11 生产	不适用	13,828.4	由世界银行核查
氟氯化碳-11 进口	不适用	661.6	根据进出口许可证制度管理*
氟氯化碳-11 出口	不适用	495.7	根据进出口许可证制度管理*
国家氟氯化碳-11 消费		**13,994.3**	**管理计划确定的消费量**

* 由消耗臭氧层物质进出口办公室管理。

18. 如上所述，中国 2003 年的年度国家氟氯化碳-11 消费限额为 15,500 ODP 吨。中国报告的消费量为 13,994.3 ODP 吨，履行了协定规定的条件。中国还没有请求提供对国家氟氯化碳-11 消费数字进行核查。如果行业消费核查依据氟氯化碳-11 消费数据，就有必要核查进出口数字。

19. 聚氨酯泡沫塑料行业的年度氟氯化碳-11 消费报告为 11,423.48 ODP 吨。世界银行按要求提供的数据见表 3。

表 3：2003 年按行业分列的国家氟氯化碳-11 消费量

行业一级的氟氯化碳-11 消费量			氟氯化碳-11 消费量（吨）		评论
			目标	实际消费量	
氟氯化碳-11 消费量 （按生产、进出口计算的供应数据）				**13,994**	
各行业	烟草行业		700	620	中国报告。由执行委员会认可，在第四十三次会议上公布供资数额
	气雾剂		不适用	279	查明的消费量作为编制制药气雾剂行业计划的一部分
	工业、商业及家庭制冷		不适用	1,325	根据中国的审议和报告
	用于维修业的氟氯化碳-11		不适用	347	
聚氨酯泡沫塑料行业	***聚氨酯泡沫塑料行业的氟氯化碳-11 消费量*** *（其他行业的供应和消费差别）*		***11,666***	***11,423***	
	泡沫塑料消费领域的次级行业比例	按现有聚氨酯泡沫塑料行业项目开列的氟氯化碳-11 消费量	不适用	1,280	根据提交多边基金的进度报告
		按不由聚氨酯泡沫塑料行业供资的公司开列的氟氯化碳-11 消费量	不适用	1,859	按照协定，中国有责任淘汰根据聚氨酯泡沫塑料行业项目不符合供资条件的企业的消费量
		聚氨酯泡沫塑料行业；按 2001 年和 2002 年合同获取的 2003 年消费量	不适用	1,771	
		尚未涉及的聚氨酯泡沫塑料行业	不适用	6,513	按聚氨酯泡沫塑料公司开列的消费量

20. 世界银行利用这组数据，将该国已知消费数据分别列入行业和次级行业的数字中。这种办法计算但没有通过从已知国家消费量推导出行业消费量数据而从宏观层面核证泡沫塑料消费量。如果进出口数据得到审计，有关聚氨酯泡沫塑料行业的数据可信度很高的话，这种办法将能够得出所需的结果。

21. 泡沫塑料行业规定聚氨酯泡沫塑料行业年度氟氯化碳-11 消费限额是 13,830 ODP 吨。中国报告的消费量是 11,423 ODP 吨，完全符合协定规定的限额。第 41/42 号决定请求核查这一数字。世界银行没有提供数据核查，并提出没有办法核查数据。

22. 泡沫塑料行业协定包括聚氨酯泡沫塑料行业的年度氟氯化碳-11 淘汰目标，商定 2003 年的这一目标是 2,500 ODP 吨。第 41/42 号决定要求核查这一目标。世界银行与这一目标有关的报告与另一目标，即根据目标签署氟氯化碳淘汰合同的报告密切相关。协定对后一个目标做出的规定是，应签署氟氯化碳淘汰合同，其数额相当于本年度合同目标的至少 50%以及上年度合同目标的 100%。

23. 世界银行提供了本报告附件一所载合同现状的数据，但没有提供目标与实际合同之间的比较。秘书处进行了比较，并编制了结果，具体结果见下表 4。

24. 核查聚氨酯泡沫塑料行业年度氟氯化碳-11 淘汰目标的方法尚未提交，请求的核查是否已进行尚不得而知。但应当注意到，可能是核查组成部分的部分数据已提供给世界银行；世界银行已按与执行委员会签署的协定，通过对一定比例的有关企业进行现场核查，提供了绩效确认。秘书处提出了这样的问题，世界银行可能探讨如何利用这一核查数据来核证行业淘汰目标。世界银行与秘书处讨论了中国监测制度的特点，以及这种制度产生的可信度，但在编制本文件时，尚未收到书面建议。

25. 泡沫塑料行业协定规定的年度最低淘汰量是 2,500 ODP 吨。中国报告的消费量是 2,721.3 ODP 吨，完全在协定规定的限额内，但没有提供第 41/42 号决定要求的核查情况。签署本年度合同目标的起码 50%以及上年度合同目标的 100%这一目标已实现。

26. 协定规定，应提供核查，以便根据年度执行方案完成为上年度规划的活动。与这一要求有关的数据在很大程度上可在提供的报告中找到。技术援助活动的记录很详尽。不过，世界银行没有提供规划的活动与落实的活动之间的比较，也没有提供有关活动核查的说明。

表 4：实际签署的合同与目标数字的比较

目标淘汰量（吨）	项目名称	年度方案	合同日期	氟氯化碳-11 消费量（吨）	差别 目标/实际（吨）
	兰州华宇	2003 年	2003 年 1 月 9 日	1,075.44	
	绍兴市雅克		2003 年 1 月 9 日	997.75	
	南通馨源		2003 年 1 月 9 日	648.11	
2,500	**2003 年总计**			**2,721.3**	**221.3**
	大连 Yuji	实际 2004 年 1 月至 6 月	2004 年 3 月 19 日	303.9	
	奉化永兴		2004 年 4 月 5 日	484	
	北京中海		2004 年 4 月 9 日	599.8	
1,250	**2004 年上半年总计**			1,387.7	**137.7**
	河间宏达	2004 年 7 月至 12 月；预期	尚未签署	399.7	
	宁波蓝天		尚未签署	226.11	
	上海 Jinyuanyuhua		尚未签署	1400	
2,500	**2004 年预计总量**			**3,413.51**	**913.51**

27. 协定的相关部分规定，应对起码 15%的转换活动进行现场检查，通过核查来确认绩效，检查的比例应占年度执行方案氟氯化碳消费量的至少 15%。

28. 世界银行在每一份中国聚氨酯泡沫塑料行业核查综合报告中都提供了充分的核查详情，尽管报告未载有选择企业的方法以及核查人或公司的名称和从属关系等资料。世界银行按秘书处的要求提供的资料说，一名独立泡沫塑料专家同世界银行的工作小组一道完成了核查。

29. 秘书处发现核查数据有不一致之处。在最后确定本文件前，相关问题没有得到解决。

30. 协定规定，根据协定提供的消费数字应与中国按《蒙特利尔议定书》第七条提交臭氧秘书处的报告一致。

31. 虽然臭氧秘书处报告第七条数据的表格要求按物质报告，但臭氧秘书处仅按组别公布总量数据。因此，具体与中国氟氯化碳-11 消费量有关的数据应由世界银行代表中国提供，作为其报告的一部分。世界银行没有提供按中国泡沫塑料行业协定报告的数据和按第七条报告的数据之间的比较。虽然基金秘书处没有理由认为两者之间有什么差异，但仍须报告数字，以证明其一致性。

32. 本年度从世界银行接到的报告未完全履行协定及第 41/42 号决定的规定。现已报告和提供年度国家氟氯化碳-11 消费量，但尚未核证。已报告泡沫塑料行业的消费量和实现的淘汰目标，但仍然未予核证。根据提供的资料或其他资料，可推断出其他规定的履行情况。另有一些问题仍未得到解决。

33. 中国编制了各类氟氯化碳生产和消费的快速淘汰计划。快速淘汰计划包含一项加速执行泡沫塑料行业计划的提议，以及关于解决 2004 至 2006 年度方案中其余泡沫塑料企业的

提议。2005 年度执行方案没有提及这一问题。

34. 中国聚氨酯泡沫塑料行业 2005 年度执行方案和 2004 年度方案执行情况附于本文件之后。10,903,000 美元及为执行 2005 年度方案而申请的 961,270 美元支助费用符合本协定的规定。

建议

35. 执行委员会谨建议考虑下述选择方案：

(a) 推迟核准供资期，直至最终确定审计手续以及提供 2003/2004 年度的相关审计；或者

(b) 核准第 34 段所述的供资期，并停止支付，直至符合上述（a）项的同等条件。

项目评价表 - 多年期项目

中国

项目名称	双边/执行机构
国家淘汰甲基溴（第二阶段）	工发组织（牵头机构） 意大利（合作执行机构）

国家协调机构：	国家环境保护总局

最新报告的项目所涉消耗臭氧层物质的消费数据

A: **第七条数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

附件 E，甲基溴	1,008.00		

B: **国家方案行业数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

消耗臭氧层物质	泡沫塑料	制冷	气雾剂	消耗臭氧层物质	溶剂	加工剂	熏蒸剂
				甲基溴			1,008.0

仍符合供资条件的氟氯化碳消费量（ODP 吨）	不适用

本年业务计划：供资总额 0 美元：总共淘汰 0 ODP 吨。

项目数据	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	共计
蒙特利尔议定书限额	1,102.1	1,102.1	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	881.7	0	
年度消费限量	1,087.8	1,087.8	880.0	723.8	570.6	390.0	250.0	209.0	176.0	150.0	100.0	50.0	0	
进行中的项目的年度淘汰量														
新解决的年度淘汰量工发组织	0	0	207.8	156.2	65.2	124.6	0	0	0	0	0	0	0	553.8
意大利新解决的年度淘汰量	0	0	0	0	88.0	56.0	140.0	41.0	33.0	26.0	50.0	50.0	50.0	534.0
总共将淘汰的消耗臭氧层物质消费	0	0	207.8	156.2	153.2	180.6	140.0	41.0	33.0	26.0	50.0	50.0	0	1,087.8
总共将逐步投入使用的消耗臭氧层物质(各类氯氟烃)														不适用
原申请项目费用 (美元)	4,086,600	0	900,000	2,200,000	2,100,000	1,800,000	1,300,000	600,000	500,000	500,000	500,000	302,742		17,873,391
最后项目费用（美元）：														
工发组织的供资	4,086,600	0	0	0	1,605,405	1,800,000	1,300,000	600,000	500,000	500,000	500,000	302,742	0	11,194,747
意大利的供资	0	0	900,000	2,200,000	494,595	0	0	0	0	0	0	0	0	3,594,595
项目供资总额	4,086,600	0	900,000	2,200,000	2,100,000	1,800,000	1,300,000	600,000	500,000	500,000	500,000	302,742	0	14,789,342
最后支助费用（美元）														
工发组织的支助费用	306,495	0	0	0	120,405	135,000	97,500	45,000	37,500	37,500	37,500	22,706	0	839,606
意大利的支助费用	0	0	109,000	242,000	54,405	0	0	0	0	0	0	0	0	405,405
支助费用总额	306,495	0	109,000	242,000	174,810	135,000	97,500	45,000	37,500	37,500	37,500	22,706	0	1,245,012
项目向多边基金申请的总费用（美元）	4,393,095*	0	1,009,000	2,274,810	2,274,810	1,935,000	1,397,500	645,000	537,500	537,500	537,500	325,448	0	16,034,354
项目最终成本效益值（美元/公斤）														13.61

* 在执行委员会第四十一次会议上核准的供资。

秘书处建议	供个别审议

项目说明

背景

36. 工发组织代表中国政府提交在消费行业淘汰甲基溴的国家计划，供执行委员会在其第四十四次会议上审议。该项目将淘汰 1,087.8 ODP 吨的甲基溴，向多边基金申请的总费用为 17,873,391 美元，包括在多边基金第四十一次会议核准的 4,086,600 美元。项目将由工发组织（牵头执行机构）和意大利政府（合作执行机构）执行。另外 5,412,889 美元将作为一项对应捐助由中国政府提供。

37. 中国甲基溴生产和消费的基准数量分别是 776.3 ODP 吨和 1,101.6 ODP 吨。编制甲基溴淘汰计划期间进行的调查得出的结果如下：

说明	ODP 吨		
	2000 年	2001 年	2002 年
生产	1,438.2	1,391.4	2,135.4
进口	1,290.0	858.6	813.0
出口	628.2	609.6	900.0
消费量，包括检疫和装运前消毒处理以及原料	2,100.0	1,640.4	2,048.4
检疫和装运前消毒处理以及原料使用	(480.0)	(644.4)	(960.6)
消费量，不包括检疫和装运前消毒处理以及原料	1,620.0	996.0	1,087.8

38. 中国生产甲基溴的公司有三家，即：连云港市海水化工厂[1]、浙江临海建新化工公司和山东昌邑化工厂。三家工厂的实际生产量约占安装容量的 40%，如下表所示：

生产厂家	ODP 吨		
	安装容量	生产量	甲基溴销售量
连云港市海水化工厂	3,000	1,549	1,613
临海建新化工公司	1,500	497	497
昌邑化工厂	540	89	104
总计	5,040	2,135	2,215

[1] 1996 年，跨国公司死海溴公司购买连云港市海水化工厂 60%的股份，并将该公司的名称更改为连云港死海溴化物公司。

39. 甲基溴的基准生产量是 776.3 ODP 吨。中国政府根据第七条向臭氧秘书处报告生产量如下表所示：

年度	ODP 产量	年度	ODP 产量
		1999	876.0
1995	171.0	2000	1,438.2
1996	660.0	2001	1,391.4
1997	876.0	2002	744.0
1998	1,398.0	2003	558.4

40. 工发组织代表中国政府提交一份淘汰甲基溴的国家计划，供执行委员会在其第四十一次会议上审议。项目申请的总费用超过 4,000 万美元（UNEP/OzL.Pro/ExCom/41/28 和 Corr.1）。不过，中国政府仅申请供资（1,720 万美元），以便将其甲基溴生产量减少 45.4 ODP 吨，甲基溴消费量减少 389.0 ODP 吨，目的是达到《蒙特利尔议定书》规定的 2005 年生产和消费限额。

41. 执行委员会审议项目提案后，决定核准 4,086,600 美元及为工发组织提供的机构支助费用 306,495 美元，以便在消费行业淘汰 389.2 ODP 吨甲基溴。执行委员会还请工发组织协助中国政府完成淘汰全部受控使用的甲基溴的项目提案，以提交执行委员会（第 41/46 号决定）。

42. 执行委员会在其第四十三次会议上根据第 41/46 号决定第 c 款，核准由工发组织（20,000 美元）执行的项目准备活动，目的是完成在中国消费行业淘汰甲基溴的国家计划。执行委员会也在其第四十三次会议上核准秘书处继续对甲基溴生产进行技术审计，审计内容包括关于受控使用及检疫和装运前消毒处理的甲基溴生产数据收集（第 43/43(b)号决定）。

<u>中国的甲基溴消费量</u>

43. 在中国，甲基溴最初仅用于检疫和装运前消毒处理应用。但近年来，中国农业部门发展壮大，并引入新型作物，从而导致甲基溴的使用量增加。目前，甲基溴用于土壤熏蒸，以生产草莓、黄瓜、西红柿、茄子、辣椒、花卉和烟草，同时也用于商品熏蒸。按作物/应用开列的甲基溴消费量见下表：

作物/应用	表面积（公顷）	甲基溴（ODP 吨）
草莓	1,297	312.0
黄瓜	99	24.0
西红柿	400	96.0
茄子	148	36.0
辣椒	149	36.0
花卉	149	30.0
烟草	250,994	427.8
商品		126.0
总计	**253,236**	**1,087.8**

淘汰战略

44. 逐步停止甲基溴消费的战略将遵循如下原则：

(a) 实行生产和进口限制及生产和进口配额制度，目的是遵守 2005 年度的消费减少量；

(b) 颁布检疫和装运前消毒处理应用许可证，以控制检疫和装运前消毒处理消费量；

(c) 在国家烟草专卖局的支助下控制烟草次级行业的甲基溴消费量，在国家粮食储备局的支助下控制商品薰蒸领域的甲基溴消费量；

(d) 执行培训方案，使所有甲基溴用户改用必要的替代技术；

(e) 使淘汰甲基溴的核查工作能够在国家、省及种植商一级进行；

(f) 重视已使用替代技术的如下作物/应用：烟草苗床（50,000 种植户已采用浮动技术）以及商品薰蒸（已使用 4,000 吨以上的磷类化合物）。

45. 中国政府按照如上原则提议根据下表所示淘汰方案到 2015 年完全淘汰甲基溴：

作物/应用	ODP **吨**											
	2004	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
草莓	312.0	312.0	312.0	272.0	242.0	128.0	100.0	80.0	60.0	40.0	20.0	0.0
黄瓜	24.0	24.0	24.0	12.0	6.0	0.0						0.0
西红柿	96.0	96.0	96.0	60.0	40.0	20.0	20.0	20.0	20.0	10.0	10.0	0.0
茄子	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	36.0	20.0	10.0	0.0
辣椒	36.0	36.0	36.0	36.0	36.0	36.0	28.0	20.0	14.0	10.0	0.0	0.0
花卉	30.0	30.0	30.0	30.0	30.0	30.0	25.0	20.0	20.0	20.0	10.0	0.0
烟草	427.8	300.0	164.6	124.6	0.0							0.0
商品	126.0	46.0	25.2	0.0								0.0
总消费量	1,087.8	880.0	723.8	570.6	390.0	250.0	209.0	176.0	150.0	100.0	50.0	0.0
淘汰	0.0	207.8	156.2	153.2	180.6	140.0	41.0	33.0	26.0	50.0	50.0	50.0

替代技术及费用

46. 按作物/应用提议的甲基溴替代技术如下表所示：

作物/应用	替代甲基溴技术
草莓	注入土壤的威百亩
黄瓜	嫁接
西红柿	注入土壤的威百亩
茄子	小地沟内的浮盘系统
辣椒	注入土壤的威百亩
烟草	浮盘系统
花卉	消毒
商品	磷类化合物（片状或球状）

47. 淘汰计划也包括培训方案。

48. 国家甲基溴淘汰计划的总费用为 23,286,281 美元。其中，5,412,889 美元作为对应供资由中国政府提供。因此，向多边基金申请的资金数额为 17,873,392 美元，分配如下：

作物/应用	ODP 吨	美元				
		资本	经营	培训	应急	总计
草莓	312.0	1,642,476	757,531	1,733,780	337,626	4,471,413
黄瓜	24.0	35,860	(41,323)	138,441	17,430	150,408
西红柿	96.0	541,477	429,993	571,577	111,305	1,654,352
茄子	36.0	44,027	(46,915)	213,885	25,791	236,788
辣椒	36.0	199,318	179,113	210,397	40,972	629,800
花卉	30.0	1,060,000	213,279	216,998	127,700	1,617,977
烟草	427.8	38,318,584	(29,939,318)	774,301	3,909,289	13,062,856
商品	126.0	1,013,030	26,880	292,250	130,528	1,462,688
总计	**1,087.8**	**42,854,772**	**(28,420,760)**	**4,151,629**	**4,700,640**	**23,286,281**
中国的捐款						(5,412,889)
总计 (*)	**1,087.8**					**17,873,392**

(*) 包括执行委员会在其第四十一次会议上核准的 4,086,600 美元。

49. 项目执行时间估计为 11 年（2004-2015 年）。

秘书处的评论和建议

评论

50. 秘书处审查中国淘汰甲基溴的国家计划时注意到，工发组织在提交执行委员会第四十

四次会议的项目提案中，考虑了秘书处在该项目提交第四十一次会议时提出的一些意见。但是，其他评论似乎没有得到处理。因此，秘书处对提案另外提出下述评论，供工发组织审议。工发组织作出的答复见下文。

与项目有关的问题

51. 秘书处和工发组织讨论的问题如下：提案中各种作物的甲基溴应用率高于其他国家同类作物的剂量率；嫁接黄瓜和茄子作物时的化学物品用量与使用甲基溴作为薰蒸剂在温室种植同类作物的化学物品用量相比过高；以及与培训、劳工和替代化学品相关的问题。工发组织解决了所有这些问题，并进一步解释如下：在计算增加的经营成本时，对某些作物使用的替代薰蒸剂剂量率较低；计算经营费用时使用的威百亩（中国本地生产）价格降低将近 0.15 美元/磅；花卉行业（也包括人参）蒸汽技术需要的锅炉工数量及使用威百亩的注射机的部分费用由农民承担。

52. 秘书处还提出并进一步讨论了与烟草行业淘汰甲基溴有关的问题，原因是这占项目总费用的 56%。具体来说，这些问题是：托盘的费用（0.82 美元/件）与核准的同类项目使用的托盘相比过高（即，阿根廷的实际托盘价格是 0.72 美元）；为在 30 公顷地表面种植的幼苗建造非常昂贵的温室（215.26 美元/公顷）而不是价格低廉的小地沟（125.84 美元/公顷）的理由；建筑小地沟时使用的是 PVC 管而不是镀锌钢拱；以及一般种子（1.520 美元/公顷）和颗粒种子（11.438 美元/公顷）之间的价格差别。工发组织表示，它与中国政府进一步讨论了这个问题，双方一致认为所有烟草幼苗都应种在小地沟内。管理大量小地沟既复杂又难以把握；在这方面，中国在小地区经营大量小地沟一旦产生问题，将立即通知秘书处。此外，双方还商定，部分建筑材料（如砖和拱形建材）由农民提供，并且将使用看上去运行十分正常的较便宜的播种机。因此，将相应调整项目费用。

53. 工发组织还告诉秘书处，中国政府同意免费提供农业人员参与在不同作物和应用方面淘汰甲基溴有关的培训方案。业经修订的培训方案费用是 1,620,130 美元。

商定的供资数量

54. 工发组织根据秘书处提出的问题以及工发组织同中国重要的有关利益者举行的进一步讨论，重新设计了项目的部分内容，并由此降低项目费用。修订的项目总费用是 14,789,342 美元，包括执行委员会在其第四十一次会议上核准的 4,086,600 美元。另外 5,412,889 美元将作为对应捐助由中国政府提供。

55. 按作物和应用分列的项目修订费用汇总于下表：

作物/应用	ODP 吨	美元					
		资本	经营	培训	应急	管理	总计
草莓	312.0	1,642,476	151,745	349,000	199,148	22,500	2,364,869
黄瓜	24.0	35,860	(41,323)	38,843	7,470	15,000	55,850
西红柿	96.0	317,200	253,394	100,427	41,763	56,250	769,034
茄子	36.0	44,027	(46,915)	40,016	8,404	22,500	68,032
辣椒	36.0	199,318	89,774	40,016	23,933	37,500	390,541
花卉	30.0	304,640	61,233	70,128	37,477	82,500	555,978
烟草	427.8	25,098,647	(19,608,307)	800,200	2,589,885	273,750	9,154,175
商品作物	126.0	1,013,030	26,880	181,500	119,453	90,000	1,430,863
总计	1,087.8	28,655,198	(19,113,519)	1,620,130	3,027,533	600,000	14,789,342

56. 淘汰计划的成本效益是 13.61 美元/公斤。中国政府将灵活使用这笔资源在它认为适宜的任何作物和领域淘汰甲基溴。

协定

57. 在编制本文件时，中国政府和意大利政府（合作执行机构）正在最后确定中国甲基溴国家淘汰计划的合作谅解备忘录。秘书处获悉，谅解备忘录将于 2004 年 11 月初签署，中国政府和执行委员会为全部淘汰附件 E 规定的物质（消费量）而拟定的协定草案也将同时完成。秘书处一收到协定草案即予审查，并在第四十四次会议举行前根据第 41/80 号决定的规定向执行委员会提出相应建议。

建议

58. 待定。

哈龙淘汰行业计划：2005 年度方案

项目说明

59. 鉴于执行委员会核准了中国的哈龙淘汰行业计划（第 23/11 号决定），中国现申请发放第八期供资 180 万美元用以执行 2005 年度方案。有了这笔供资，中国的哈龙-1211 生产量和消费量将分别保持在最高 1,990 公吨和 1,890 公吨。哈龙-1301 的产量将保持在最高 600 公吨，消费量最高 150 公吨。世界银行提交的申请书提供了年度方案的详细情况，并且登载在基金秘书处的网站上（www.unmfs.org）。2005 年度方案包括技术援助活动，以便支持哈龙淘汰方案并确保现有的消防要求得到满足。

60. 中国政府将根据从头七年的年度方案中取得的经验，继续为哈龙淘汰活动执行和改进关闭/转产合同的投标工作，继续执行可以买卖的生产配额，并逐步严格定义必要用途，进一步禁止为非必要用途新建哈龙灭火剂设施。为了支持地方执行关于非必要用途的禁令，中国政府将确保通过新闻媒体、公告等将该禁令的详细规定传达给潜在的消费者；地方消防局和环境保护局将定期检查消费者，向公安部和国家环境保护总局提交定期报告；对哈龙销售实行更为严格的管制。

61. 通过生产配额、投标制度和行政措施的并用，企业将得到用于开展关闭和转产活动的资金。

62. 中国现在申请发放 2005 年度方案用于开展技术援助活动的批款 180 万美元，以支持哈龙淘汰方案，确保现有的消防要求得到满足。

63. 为 2005 年计划的技术援助活动包括：核查二氧化碳和清洁介质灭火器的实际产量，研究如何评估哈龙的必要用途，建立广东哈龙再循环中心的监测和管理机制，培训参加逐步淘汰活动的人员，就哈龙-1301 消防系统生产商进行调查，以及对该年度方案的企业进行审计。

主要倡议的状况

ABC 粉末厂

64. 用协定提供的资金购买的 ABC 粉末厂（佛山电子化工总厂）拥有 3,000 吨年生产能力，在 2002 年 12 月投产之后，2002 年生产了 1,545 公吨，2003 年生产了 3,014 公吨。

二氧化碳轻型灭火器制造商

65. 所有生产设备都已安装完毕，2004 年 10 月在中国政府交付之后，就开始了商业性的灭火器生产活动。该厂家的年生产能力为 600,000 套。

哈龙库

66. 番禺 Shengjie 消防设备公司被选为在广东建立哈龙库的受益者，其每年的再循环能力为 500 公吨。设备已经安装完毕，中国政府于 2004 年 7 月使该项目投产。

蔬菜泡沫塑料技术

67. 廊坊 Yida 技术公司被选为建立 Honsen L119 植物蛋白基泡沫塑料生产线的受益者，其生产能力为 3,600 公吨。

秘书处的评论和建议

评论

消费和生产指标

68. 审计报告确认 2003 年的消费和生产指标均已完成。

69. 连续第二年，由于没有需求，2003 年中国没有生产哈龙 1301。根据协定，中国可以生产 6,000 ODP 吨。

2003 年底的库存量

70. 审计报告表明，2003 年底哈龙 211 的总库存量为 2,416 公吨（7,248 ODP 吨），哈龙 1301 的总库存量为 247.1 公吨（2,471 ODP 吨）。审计员指出，哈龙 1211 的售价降低了 4%，从每公吨 22,773 元人民币（2.75 美元/公斤）降至每公吨 21,866 元人民币（2.64 美元/公斤）。哈龙 1301 的售价降低了 1%，从每公吨 68,338 元人民币（8.25 美元/公斤）降至 69,167 元人民币（8.35 美元/公斤）。

哈龙 1301 可能用作杀虫剂

71. 审计报告指出，哈龙 1301 有可能用作名为 Fiprohil 的杀虫剂的原材料。审计员指出，如果中国的哈龙 1301 市场将要扩大，他们不能确定这种风险对淘汰方案会有何影响。

二氧化碳灭火器生产调查

72. 关于特别倡议的文件附件五指出，二氧化碳灭火器生产调查于 2003 年 6 月开始，预计在 2003 年 9 月 30 日之前完成。第 23/11 号决定 E 段指出，中国也同意，在彻底转产之后，2005 年中国生产的至少 359 万个灭火器是二氧化碳灭火器或使用至少同样昂贵技术的灭火器。如果情况并非如此，应按每个比二氧化碳灭火器或同等的灭火器低 3.08 美元的费率退回这笔供资。

73. 世界银行指出，它认为第 23/11 号决定 E 段中的指标是累积指标而不是年度指标。但是，基金秘书处注意到，按照 E 段，中国应该在 2005 年生产 359 万个二氧化碳或类似的灭火器。

74. 世界银行上一年的报告指出，早期的调查结果表明，2002 年全国二氧化碳灭火器的产量为 156 万套。与 1999 年相比，年增长率达到 20%。世界银行还指出，一些灭火器制造商向国家环境保护总局表明，它们打算涉足二氧化碳灭火器行业，因为市场需求有所增长。中国现在将开展另一次调查，调查预计在 2006 年上半年完成，中国已在提交 2007 年年度计划时向执行委员会报告。

建议

75. 谨提议执行委员会批准中国哈龙计划 2005 年工作方案的商定供资数额 1,800,000 美元和机构费用 135,000 美元。

逐步停止用作加工剂及其他未确定用途的四氯化碳的生产和消费（第一阶段）：2005 年年度方案

背景

76. 在 2002 年 11 月第三十八次会议上，执行委员会原则上核准为与中华人民共和国签订的协定拨款 6,500 万美元，用以逐步停止作为加工剂的四氯化碳的生产和消费及氟氯化碳-113 的消费（第一阶段），并在那次会议上拨出第一期经费 200 万美元，以开始执行该协定。中国承诺通过执行该协定，遵守《蒙特利尔议定书》逐步停止四氯化碳生产和消费的时间表。后来在 2003 年 3 月第三十九次会议和 2004 年 7 月第四十三次会议上，执行委员会核准了 2003 年和 2004 年的年度方案，其供资额分别为 2,000 万美元和 1,600 万美元。

77. 世界银行现在要代表中国政府提交 2005 年度方案，同时指出它将在第四十五次会议上请求核准第四期供资 200 万美元及相关的支助费用，并提交有关 2004 年度工作方案执行情况的核查报告。2005 年度方案的目标、影响和其他关键数据见下文。

2005 年度方案的目标和影响

消费	
用作 25 种加工剂的四氯化碳	
2004 年	5,049 ODP 吨
2005 年	493 ODP 吨
影响	4,556 ODP 吨
用作加工剂的氟氯化碳-113	
2004 年	14 ODP 吨
2005 年	14 ODP 吨
影响	0
生产	
四氯化碳	
2004 年	54,857 ODP 吨
2005 年	38,686 ODP 吨
影响	16,171 ODP 吨
原则上核准的多边基金供资总额	6,500 万美元
2004 年 10 月之前多边基金已拨付的资金总额	3,800 万美元
申请的供资数额	200 万美元

78. 在世界银行提交的文件中，第一份就是有关 2004 年度方案执行情况的进度报告，这些文件说明了中国政府从政策上，各行业在企业一级为减少四氯化碳的生产和消费以及为了技术援助而采取的措施。中国政府继续实施 2003 年建立的四氯化碳生产、消费和销售许

可证制度。根据“关于实施四氯化碳生产配额许可证制度的通知”，所有四氯化碳生产厂家，包括新建的氯甲烷厂在内，都分配了配额。没有配额的工厂必须从其他生产厂家购买配额，或利用作为副产品产生的四氯化碳作原料，或者根本不用它。

79. 2003 年 5 月颁布的“关于实施四氯化碳生产配额许可证制度的通知”要求四氯化碳经销商和消费企业登记并申请销售和购买受控物质的许可证，并且每个季度向国家环境保护总局提交一次报告。这种管制在 2004 年扩大到所有四氯化碳消费者，包括协定所涵盖的 25 种用途、其他新反应剂中的用途、非消耗臭氧层物质原料用途和溶剂。

80. 中国政府在 2004 年颁发了“四氯化碳生产企业驻厂督察管理办法的通知”，通知引入了在逐步停止氟氯化碳生产计划中所使用的同侪监督制度。自 2004 年 1 月起，20 名监督人员经过培训被分配到各四氯化碳生产厂家。

81. 国家环境保护总局与 3 家指定的四氯化碳生产厂家签订了在 2004 年减产 8,514 ODP 吨的合同，并与一家蒸馏厂签订了停止生产 41 ODP 吨的合同。据报告，由于这些合同共计减少 8,555 ODP 吨，这将会确保在 2004 年实现协定中规定的使产量从 2003 年的 61,514 ODP 吨减少到 54,857 ODP 吨的生产目标。

82. 在消费方面，国家环境保护总局与 12 家将四氯化碳用于加工剂的企业签订了总计 3,209 ODP 吨消费量的合同，这一数字低于协定中规定的 5,049 ODP 吨允许的消费目标。4 家聚四氟乙烯企业获得了 14 ODP 吨的氟氯化碳-113 消费配额，与协定中规定的目标水平相同。这些合同兼顾了排放控制、关闭和转产活动。文件中的表 2 和表 3 提供了这些合同中有关预期减少生产和消费的详细情况。

83. 根据技术援助方案，世界银行提交的文件报告了正在实施的一些活动的进展情况，如信息管理系统扩大到包括四氯化碳；四氯化碳生产厂家和审计员的培训；有关在 CSM 生产过程中聚四氟乙烯生产和排放控制方面转用氟氯化碳-113 替代技术的咨询服务；但也为 2004 年规划了一些新的活动，如有关四氯化碳转换和焚化技术的 2004 年国际讲习班，以及有关四氯化碳用作原料的国际调查。

84. 2005 年度方案涵盖了已经规划的目标和拟议用来实现这些目标的各种活动。中国政府打算遵守协定中规定的目标，并减少四氯化碳产量 16,167 ODP 吨，即从 2004 年的 54,857 ODP 吨减少到 2005 年的 38,686 ODP 吨，同时减少四氯化碳的消费 4,556 ODP 吨，即从 2004 年的 5,049 ODP 吨减少到 2005 年的 493 ODP 吨。氟氯化碳-113 用作加工剂的消费仍将保持在协定中规定的 14 ODP 吨。

85. 在政策上，中国政府计划继续实施在前几段中讨论的四氯化碳和氟氯化碳-113 生产和消费的管制措施。将向生产厂家和消费者分配与目标相同的配额，并以合同的形式确定下来。为了减少生产，将与 1 个生产厂家签订停止生产合同，与另外 3 家生产厂家签订减少产量合同。2005 年度的技术援助活动主要侧重于加强四氯化碳行业计划的实施和监督机制，如对四氯化碳生产厂家、消费者、经销商和审计员的培训以及进行绩效审计。对四氯化碳生产厂家的日常驻厂监督将在 2005 年继续进行。

86. 表 4 列出了 2005 年度方案的目标，并且载有生产、消费、2004 年和 2005 年度数据的比较、将要实现的减少数量、每类活动的供资数额、按关键措施和日期分列的监测指标。表 5 在生产和消费两类项下按政策措施和企业活动列出了供资细目，并且还列出了关键措施和完成日期。表 6 列出了有关 2005 年度技术援助方案的详细情况，并且还列出有关供资、措施和完成日期的情况。

87. 据世界银行提交的文件估计，实施 2005 年度方案需要的费用总额为 1,200 万美元，但协定中为 2005 年度分配的资金只有 200 万美元。该行业计划的目的是弥补 2003-2004 年度方案未分配余额和/或将要在 2006/2007 年度供资的未清承付款的不足。附件一介绍了中国所有四氯化碳生产厂商的现状以及截至 2004 年的生产规模。附件二列出了一个有关四氯化碳消费企业的名单，并附有关于 1997-2003 年四氯化碳用途、产品、年消费量的资料。附件三是一个有关 2003-2004 年度技术援助活动的清单。

秘书处的评论

88. 2005 年度方案要求按照协定的规定实现四氯化碳生产和消费的大幅减少，即减少四氯化碳的生产 16,171 ODP 吨，减少消费 4,556 ODP 吨。2005 年度方案的成果也将成为确定中国是否能够遵守《蒙特利尔议定书》所要求的将四氯化碳的生产和消费减少 85%的依据。另外，还有一个复杂的问题，即在氯甲烷生产中产生的四氯化碳副产品。

89. 中国政府已对生产和消费实施了相当严格的管制，包括要求所有四氯化碳经销商和消费者进行登记并取得许可证，要求所有生产厂家按照许可要求进行生产，包括氯甲烷生产厂商在内。另外，政府还为四氯化碳生产厂家建立了与氟氯化碳生产厂家相同的同侪监督机制。中国政府和世界银行还就这一行业计划的监督和核查制度达成了一致意见，执行委员会已在第四十三次会议审查并批准了这一行业计划。

90. 作为根据第 43/25 号决定（其中请秘书处和世界银行审查四氯化碳协定，并就目标的组成情况向执行委员会汇报）采取的行动，秘书处与世界银行进行会谈，并且按照《蒙特利尔议定书》中的要求对协定中的语言和目标意图以及在中国的四氯化碳生产和消费情况进行审查。双方得出结论认为，协定并不是要控制四氯化碳作为非消耗臭氧层物质化学品原料的生产和使用，但中国将核查用于这种用途的数量，并根据《蒙特利尔议定书》第七条之规定向臭氧秘书处报告。双方进一步约定，有必要澄清协定的范围，并且应该在不修改协定的情况下，以执行委员会决定的形式进行。

建议

91. 秘书处谨建议执行委员会：

(a) 确认在 2002 年第三十八次会议上核可的、与中华人民共和国签订的逐步淘汰用作加工剂的四氯化碳的协定（第一阶段）并不管制作为非消耗臭氧层物质化学品原料的四氯化碳的生产和使用，但中国应核查用于这种用途的四氯化碳数量，并根

据《蒙特利尔议定书》第七条之规定向臭氧秘书处报告。

(b) 核准 2005 年度工作方案，但在世界银行在第四十五次会议上提交 2004 工作方案的核查报告之前，暂不拨付供资及相关支助费用。

化工生产行业氟氯化碳整体淘汰计划：
2005 年度方案

项目说明

92. 《中国化工生产部门行业协议》要求年度方案应在方案确定之年的前一年度末次会议提交审查，因此，世界银行已依照该协议提交 2005 年协议履行年度方案（后附）。这样做的考虑是，对 2005 年方案的供资，将在 2004 年圆满履行方案的基础上于 2005 年第一次会议上按照该协议提出批准申请。下表概括了中国氟氯化碳生产行业计划及 2004 和 2005 年工作方案的关键数据。

国家	中华人民共和国
项目名称	中国化工生产行业氟氯化碳整体淘汰计划
计划年度	2005 年
计划年度	5 年
根据计划剩下的年数	5 年（根据原定时间）
2004 年氟氯化碳生产上限（以 ODP 吨计）	25,300 ODP 吨
2005 年氟氯化碳生产上限（以 ODP 吨计）	18,750 ODP 吨
原则上为氟氯化碳行业计划核准的经费总额	1.5 亿美元
截至 2004 年 10 月发放的经费总额	8,500 万美元
世界银行向中国支付的经费总额（2004 年 10 月）	6,550 万美元
2005 年年度计划请求的经费数额	1,300 万美元

93. 提出的方案分两部分：

(a) 第一部分为中国《行业整体淘汰协议》自 1999 年批准以来履行情况的简要报告，包括在当年中期履行 2004 年年度方案所取得的进展。以下为简要报告最为显著的特征：

（一） 1999 至 2004 年，通过履行《中国化工生产行业整体淘汰协议》，氟氯化碳生产厂的数量从 1999 年的 37 家减至 2004 年的 6 家，氟氯化碳生产从 1999 年的 50,351 ODP 吨减至 2004 年的 25,300 ODP 吨（这将在 2005 年初得到核查）。每年的年产量均通过中国国家审计署对年度方案进行全国审计和世界银行委托对生产进行的国际核查得到确认。从 2004 年年度方案启动以来，氟氯化碳生产淘汰方案的履行开始与中国现行的其他相关行业计划建立联系。政府将发放生产配额，以确保 2004 和 2005 年全国氟氯化碳-11 总消费量的最高限度符合《中国聚氨酯泡沫塑料行业氟氯化碳整体淘汰协议》的规定。方案规定的核查将对中国根据《蒙特利尔议定书》关于氟氯化碳-13 控制时间表生产氟氯化碳-13 的履约情况进行监测。此外，氟氯化碳生产行业计划也将开始管制中国四氯化碳行业计划中氟氯化碳-13 用作加工剂，及溶剂行业计划中用作溶剂的供应情况。2004 年年度

方案的履行仍然依赖行政措施与可转让的生产配额相结合，因为生产者数量减少与持续市场需求使单一依赖自愿生产配额以减少氟氯化碳生产日益困难。附件一包含 9 个表，对 2004 年五个年度方案履行以来的结果进行概述，包括企业名称、氟氯化碳产品、（已关闭或正生产的）工厂的生产能力和状况。2004 年方案的执行结果将由世界银行核查，并向 2005 年执行委员会第一次会议报告。

（二） 2004 年年度方案进度报告仍然列示了中国政府制定的政策管理措施，如 1999 年 5 月 31 日国家环境保护总局与国家石油和化学工业局发布的《关于执行氟氯化碳生产配额制度的通知》、2000 年 4 月发布的《关于加强消耗臭氧层物质进出口管理的通知》以及 1999 年 12 月颁布的《关于消耗臭氧层物质进出口管理机制的通知》。四氯化碳是氟氯化碳生产的主要原料，2000 年 4 月禁止其进口。2004 年，政府继续执行国家环境保护总局于 2001 年 12 月发布的《关于对各类氟氯化碳化工生产企业进行现场监管条例》。根据该条例，剩余氟氯化碳生产者的专业技术人员由国家环境保护总局指定为督导员，派驻同侪生产者工厂，以进行全年现场相互监督。这已证明是一项有效的监测机制。

（三） 技术援助方案的履行情况已得到更新。据此，39 项计划活动中，总共推行了 30 项。除培训海关关员和进行绩效审计的人员等传统活动外，提交的方案报告了在成立中国履约中心方面所取得的进展，成立该中心的目的是为了强化中央对中国未来几年《蒙特利尔议定书》管制措施遵守情况的管理。成立该中心所需的部分资金将来自氟氯化碳生产行业计划。2004 年年度方案也报告了中国氟氢-134a 生产设施成功交付使用的情况，并且考虑将生产能力扩大到 10,000 公吨，以满足国家日益增长的需求。附件三包含 5 个表，根据年度工作方案列示了所计划的每项技术援助活动的状况。

(b) 世界银行所提方案的第二部分描述了 2005 年方案的组成部分，包括政策行动、生产企业将实现的减产情况，以及技术援助活动。关键部分，即减产部分，规定 2005 年淘汰 6,555 ODP 吨，以达到协议拟定的目标：全国氟氯化碳产量应由 2004 年的 25,300 ODP 吨减至 2005 年的 18,750 ODP 吨。中国将继续通过投标、生产配额分配和行政措施相结合的办法来减少产量。现行政策框架将维持下去，特别是生产配额的管理，将通过生产厂家现场同侪监督得到执行和监测。

94. 世界银行提交的方案包括一份中国按照协议确定的 15 家氟氯烃化合物生产企业更新名单。名单上第 3 家企业已改名，大概由于管理层发生了变化；第 6 家企业，上海氯碱化工有限公司，结束了氟氯烃化合物的生产，并且拆除了生产设备；第 16 家企业是名单上新增的，这是一家新型的氟氯烃化合物生产厂。生产者的总数仍然为 15。

95. 用于履行 2005 年方案的 1,300 万美元目前计划全部用来补偿减少氟氯化碳产量的企业，尽管一旦提供更精确的支出概算，可能要对该金额进行重新分配。

秘书处的评论

96. 2004 年年度工作方案截至 6 月份一直按计划履行，据报告，氟氯化碳生产到年中约为本年度容许生产量的 50%。国家环境保护总局确立由同侪氟氯化碳生产者进行现场监督，这一做法经证明是监测氟氯化碳生产的有效工具。方案独立核查报告在 2005 年第四十五次会议提交时，对 2004 年工作方案的全面评价即可取得。

97. 中国政府和世界银行开始将氟氯化碳生产行业计划与 2004 年中国履行的其他相关消费行业淘汰计划联系起来。这种做法很好，因为对于氟氯化碳生产国家来说，监测氟氯化碳生产有助于监测消费行业协议规定的这些消耗臭氧层物质的供应情况，并使得有可能在这些行业监测有关消耗臭氧层物质消费的情况，如溶剂行业计划和四氯化碳行业计划规定的氟氯化碳-13 消费情况和泡沫塑料行业计划规定的氟氯化碳-11 消费情况。方案鼓励中国政府和世界银行为监测履行情况的目的审查氟氯化碳生产行业计划与其他消费行业计划之间的联系。

98. 2005 年工作方案的目标与协议规定的目标一致，各项活动都经过了周密计划，完成日期也很合理。年度方案的成功实施将使中国氟氯化碳产量减至 18,750 ODP 吨，即减至中国 47,004 ODP 吨基准的 50%以下，符合《蒙特利尔议定书》控制时间表的要求。

建议

99. 秘书处建议执行委员会：

(a) 核准中国氟氯化碳生产淘汰方案的 2005 年工作方案，同时指出要求供资和支助费用的申请连同关于 2004 年年度方案履行情况的核查报告将由世界银行向第四十五次会议提交。

(b) 鼓励中国政府和世界银行为监测目的审查氟氯化碳生产行业淘汰计划和其他相关氟氯化碳和其他消耗臭氧层物质消费行业计划之间的联系。

项目评价表——多年期项目

国家：中国

项目名称	双边/执行机构
制冷维修行业氟氯化碳淘汰计划	工发组织和日本

国家协调机构：	国家环保总局

最新报告的项目所涉消耗臭氧层物质的消费数据

A: **第七条数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

氟氯化碳	22,826		

B: **国家方案行业数据**（ODP 吨，2003 年，**截至** 2004 年 10 月）

消耗臭氧层物质	泡沫塑料	制冷	气雾剂	消耗臭氧层物质	溶剂	加工剂	熏蒸剂
氟氯化碳－11	11,423	1,672	280	氟氯化碳-113	1,677		
氟氯化碳－12	116	6,044	780				
氟氯化碳－114		8					
氟氯化碳－115		187					

仍符合供资条件的氟氯化碳消费量（ODP 吨）	940.5

本年业务计划：供资总额（工发组织）107.5 万美元：总共淘汰：200 ODP 吨。

项目数据		2004	2005	2006	2007	2008	2009	2010	共计
消耗臭氧层物质 (ODP 吨)	蒙特利尔议定书限额	57,819	28,909	28,909	8,673	8,673	8,673	0	不适用
	年度消费限量（制冷维修）	4,628	4,162	3,424	2,704	2,051	1,590	1,100	不适用
	进行中的项目的年度淘汰量	0	0	0	0	0	0	0	
	新解决的年度淘汰量	0.0	466	738	720	653	461	490	3,528
	无资助情况下年度淘汰量	0	0	0	0	0	0		
总共将淘汰的消耗臭氧层物质消费			466	738	720	653	461	490	3,528
总共将淘汰的消耗臭氧层物质（各类氟氯烃）			0	0	0	0	0	0	0
原申请项目费用 (千美元)		2.070	5.520	1.251	0	0	0	0	8.841
最后项目费用 (千美元):									
工发组织的资金		1.000	0	700	700	700	500	285	3.885
日本的资金		1.000	3.000	0	0	0	0	0	4.000
项目供资总额		2.000	3.000	700	700	700	500	285	7.885
最后支助费用 (千美元)									
牵头机构工发组织的支助费用		75	0	52.5	52.5	52.5	37.5	21.375	291.375
日本的支助费用		130	390	0	0	0	0	0	520
支助费用总额		205	390	52.5	52.5	52.5	37.5	2.1375	811.375
项目向多边基金申请的总费用（千美元）		2.205	3.390	752.5	752.5	752.5	537.5	306.375	8.696,375
项目最终成本效益值（美元 / 公斤）									5.48

资金申请：**原则上核准全部消耗臭氧层物质淘汰、全部项目资金和全部支助费用，并核准如上所述**（2004）**年第一期的供资。**

秘书处建议	待定

项目说明

100. 中国政府已经向执行委员会第四十四次会议提交《制冷维修行业氟氯化碳淘汰计划》（以下简称该计划）供其审议。该计划由工发组织和日本政府起草，是一个双边项目。该计划应在《中国加速氟氯化碳淘汰计划》的范围内进行审议。根据《中国加速氟氯化碳淘汰计划》，中国应该在氟氯化碳生产行业协议前的两年内停止氟氯化碳的生产，这样，从 2008 年 1 月 1 日开始不再生产氟氯化碳（任何议定的氟氯化碳必要用途除外）。自 2008 年开始，通过库存或氟氯化碳设备回收、再循环以及再生的储藏氟氯化碳满足氟氯化碳需求。《加速氟氯化碳淘汰计划》由世界银行提交给了第四十四次会议，《制冷维修行业氟氯化碳淘汰计划》的实施将导致中国制冷维修行业淘汰附件 A 第一组（各类氟氯化碳）的剩余消费。已提交该计划的所需成本，为 8,841,100 美元（不包括代理机构的支持费用）。

中国消耗臭氧层物质的消耗

101. 1995 年至 2002 年各类氟氯化碳消耗与生产的历史数据（ODP 吨）如下表所示：

年份	1995	1996	1997	1998	1999	2000	2001	2002
消耗	75,290.8	47,089	51,076.4	55,414	42,983.4	39,123.6	33,922.6	30,621.2
生产	46,671.6	44,016.2	50,323.8	55,402	44,739.4	39,962.8	36,167.2	32,269

102. 中国自 1995 年至 1997 年期间对附件 A 第一组物质的最低平均消耗为 57,818.7 ODP 吨。该国一直遵守《蒙特利尔议定书》有关氟氯化碳消耗控制的措施。

103. 下表显示了中国关于有资格获得多边基金资助的氟氯化碳消耗数据（ODP 吨）：

基准消费量	57,818.7
第 35/57 号决定确定的起始点	4,745.0
起始点之后资助的消费量	2,367.5
截至提交建议书仍符合条件的未资助消费量	**2,377.5**

104. 在有资格获得资助的 2,377.5 ODP 吨中，中国政府已经为维修行业淘汰计划指定 1,437 ODP 吨。

105. 到 2003 年年底，氟氯化碳消耗行业的大多数淘汰计划已经得到执行委员会的批准，目前正在实施之中。这些活动包括溶剂行业消耗臭氧层物质的淘汰、烟草行业氟氯化碳-11 的淘汰、泡沫塑料行业氟氯化碳-11 的淘汰、家用制冷行业氟氯化碳的淘汰和工商制冷行业中氟氯化碳的淘汰。

106. 根据这一维修行业计划的批准和实施，表 5 按行业分列了 2003 年至 2010 年期间通过实施加速淘汰计划的氟氯化碳消耗预测。

表 5：中国氟氯化碳消耗预测（吨）

生产/消费	2003	2004	2005	2006	2007	2008	2009	2010
最大允许消费量	**57,818.7**	**57,818.7**	**28,909.3**	**28,909.3**	**8,672.8**	**8,672.8**	**8,672.8**	**0**
按照协议允许的最大生产量	30,000	25,300	18,750	13,500	9,600	7,400	3,200	0
氟氯化碳生产的加速淘汰目标	**30,000**	**25,300**	**18,750**	**13,500**	**9,600**	**0****	**0****	**0****
	氟氯化碳-11							
泡沫塑料行业	11,423	11,666	9,646	7,164	400	0	0	0
烟草行业	620	500	300	150	0	0	0	0
家用制冷行业	1,325	927	649	0	0	0	0	0
外用药用气雾剂	178	190	204	234	208	104	260	0
甲撑二苯基二异氰酸酯	102	107	109	125	144	144	144	*
冷风机维修	347	303	258	214	198	171	101	81
氟氯化碳-11 共计	13,995	13,693	11,166	7,887	950	419	271	81
	氟氯化碳-12							
泡沫塑料行业	116	100	0	0	0	0	0	0
家用制冷行业	331	232	162	0	0	0	0	0
工业和商业制冷行业	623	500	500	0	0	0	0	0
外用药用气雾剂	513	555	580	667	592	296	74	0
甲撑二苯基二异氰酸酯	267	290	309	356	409	409	409	*
制冷维修合计	5,090	4,628	4,162	3,424	2,704	2,051	1,590	1,100
氟氯化碳-12 消费共计	6,940	6,305	5,713	4,447	3,705	2,756	2,073	1,100
氟氯化碳-113 需求共计	1,677	1,100	550	0	0	0	0	0
其他氟氯化碳物质需求共计	212	164	164	164	164	0	0	0
按照加速淘汰计划的预期需求**	**22,824**	**21,262**	**17,593**	**12,498**	**4,819**	**3,175**	**2,344**	**1,181**
出口减进口	7,176	不适用	不适用	不适用	不适用	不适用	不适用	不适用
加速淘汰计划中的其他消耗臭氧层物质	0	4,038	1,157	1,002	4,781	-3,175	-2,344	-1,181

* 必要用途需经各方同意。

** 必要用途生产除外，包括根据单独的未来协议还未淘汰的甲撑二苯基二异氰酸酯。

107. 2007 年以后，只有制冷和空调维修行业和甲撑二苯基二异氰酸酯生产才可使用氟氯化碳。为满足维修行业对氟氯化碳的需求，中国将在 2006 年和 2007 年储存氟氯化碳，并通过维修行业回收和再循环/再生/二次利用氟氯化碳。中国还将鼓励改型设施采用干粉制冷剂作为替代品，以减少工商制冷设备维修对氟氯化碳的需求。另外，中国还决定，2006 年和 2007 年加速泡沫塑料行业内部的淘汰，减少直接消耗。

108. 中国的制冷维修行业已经划分为四个次级行业，即汽车空调(MAC)、家用制冷行业（DRS）、工商制冷行业（ICRS）和冷风机行业。以下是每一维修次级行业的简单说明：

汽车空调行业

109. 自 1991 年至 2001 年，中国汽车的总产量从 71 万辆增加到 230 万辆，其中包括近 703,000 辆轿车、829,000 辆公共汽车和 802,000 辆卡车。2001 年，中国生产的 703,000 辆轿车中，共有 697,000 辆轿车安装了汽车空调，占总数的 99%，而 1991 年为 88%。2001 年公共汽车的汽车空调安装率大约为 37%。到 1993 年，中国生产的所有汽车均使用氟氯化碳-12 作为制冷剂。1993 年以后，汽车和汽车空调制造商开始寻找氟氯化碳-12 的替代品。1995 年，中国生产的轿车中 97.6%的汽车空调系统均使用氟氯化碳，只有 2.4%使用氟烷-134a。2001 年，使用氟氯化碳的汽车空调数量下降到 14.5%，而使用氟烷-134a 的汽车空调数上升到了 85.5%。2002 年，所有汽车空调均使用氟烷-134a。同样，直到 1995 年，所有进口轿车安装的都是氟氯化碳汽车空调，但自那以后，只进口安装使用氟烷-134a 的汽车空调的汽车。2001 年，中国只有 678,000 辆安装了使用氟氯化碳汽车空调的汽车。专家组调查结果显示，近 80%的氟氯化碳消耗出现在汽车制造商拥有的维修分公司或授权的维修站。2003 年的氟氯化碳-12 的使用量为 1,434 ODP 吨。

家用制冷行业

110. 2001 年，使用氟氯化碳-12 的冰箱和冰柜占了总数 1.65 亿台的 75%，其余 25%使用的是无消耗臭氧层物质的替代品。使用氟烷-134a 的冰箱占近 11%，使用 R-600a 的冰箱占 10.2%，其他冰箱占总量的 3.1% 。家用制冷维修店分为以下几类：

(a) 由冰箱制造商建立的维修自己产品的特约维修店。这些维修店设备相对较好，维修技术人员也是训练有素的。一些大的制造商拥有 100 多家特约维修店；

(b) 与一家或多家冰箱制造商签订合同的合同维修店。大制造商共有 4,000 多家合同维修店。中型制造商拥有大约 1,000 家合同维修店，小型制造商拥有大约 100 家维修店；和

(c) 另外，还有当地社区或冰箱销售商建立的私人维修店。这些维修店通常雇用一到两名技术人员，以家族企业的形式经营。

111. 2001 年，家用制冷设备维修对氟氯化碳-12 的总消耗估计共达 484 吨。

工商业制冷行业

112. 工商制冷行业包括许多类型的设备，如食品冰箱、冰柜、冷饮售货机、冰激凌机、冷藏车等。从维修的观点看，主要三种类型，即商业冰箱和冰柜、小型冷藏机和工业制冷系统。2001 年，中国使用的商业冰箱和冰柜接近 5,000 万台，大约 75%的机器使用氟氯化碳-12 。2001 年小型冷藏机的总数接近 30 万台，其中 40%使用氟氯化碳-12。

113. 工商业制冷维修主要由制造商或他们授权的附属维修公司进行。受到在中国运行的外国制造商制冷设备管理模式的影响，中国的一些主要工商业制冷维修设备的生产商在大

中型城市设立了技术维修部门，为销售的制冷设备和零部件提供维修。许多制造商还把售后维修和设备的维修工作委托 给他们的分销商。还有一批联合经营的维修机构。到 2001 年底，中国拥有近 10,000 家维修公司，共雇用了近 10 万名技术人员。2001 年工商业制冷维修行业的氟氯化碳总消耗量估计为 3,474 吨。其中，商业冰箱和冰柜维修的消耗量为 234 吨，小型冷藏机的消耗量为 2,400 吨，工业制冷系统的消耗量为 840 吨。

冷风机

114. 2001 年，中国使用氟氯化碳-11 的冷风机总数为近 3,710 台，其中，有 1，909 台 为进口机组，其他为国内生产。同年，使用氟氯化碳-12 的冷风机总数为 338 台，其中 231 台是进口机组，其他为国内生产。2001 年，所有冷风机（包括进口机组和国内生产的机组）使用氟氯化碳-11 和氟氯化碳-12 的总数分别为 2,334 吨和 141 吨。进口和国内生产的冷风机氟氯化碳泄漏率（包括氟氯化碳-11 和氟氯化碳-12）是原注入量的 20%。2001 年，维修中氟氯化碳-11 的消耗量估计为 467 吨，其中进口机组为 248 吨，国内生产机组为 219 吨。2001 年，维修中氟氯化碳-12 的消耗量估计为 28 吨，其中进口机组为 15.5 吨，国内生产机组为 12.5 吨。

115. 根据第 4 章描述的战略，正在计划为所有制冷维修次级行业开展活动，旨在减少氟氯化碳的消耗。但是，来自多边基金的资助只要求用于汽车空调维修。工商制冷和冷风机次级行业中的氟氯化碳消耗量将通过中国政府和地方工业的共同努力来减少。多边基金将通过开展维修技术人员培训计划资助家用制冷次级行业。所有维修次级行业将从正在制定的立法措施和提高认识方案中受益。

减少制冷维修和运营中氟氯化碳消耗的战略

116. 希望通过提高认识方案、立法措施和综合技术人员培训计划等的实施减少氟氯化碳的使用。由于有更好的维修方法，将使得维修或修理工作过程中以及在设备操作过程中氟氯化碳制冷剂从设备中的有意泄漏和无意泄漏得以减少。另外，通过引入国家汽车空调次级行业回收和再循环计划，于 2005 年至 2010 年期间逐渐减少维修行业的氟氯化碳的消耗。因此，维修店将在更大程度上依赖回收、再循环或再生的制冷剂从事维修工作。中国政府已经把汽车空调次级行业确定为投资资助要求的优先领域。

117. 以下提议是计划的汽车空调维修淘汰战略的一部分：

(a) 维修技术人员的培训

(b) 提高认识

(c) 为汽车维修公司提供回收和再循环设备

(d) 国家回收、再生和销毁网络的建设

(e) 加强国内职业学校

(f) 制订合适的行业规范

(g) 信息管理系统(MIS) 和监测

(h) 政策制定

提议的影响

118. 采取良性维修可以有助于减少泄漏，从而缩短维修之间的时间。通过良性维修节省的氟氯化碳数量可以保守地估算为大约占汽车空调维修行业总氟氯化碳消耗量的 20%。三种关键措施，即培训、提高认识的活动以及制订适当的行业规范，有望促进良性维修的实施和汽车空调维修中硬件返修服务的使用。这将有助于氟氯化碳的淘汰过程。从 2010 年起将使用从废弃汽车空调中再生的氟氯化碳，以满足使用氟氯化碳的汽车空调维修的需求和其他制冷电器/设备维修的需求。

119. 在其他次级行业，培训、提高认识和制订良性行业规范将共同促进维修公司良性维修的实施。这将有助于减少家用和商业电器维修行业中氟氯化碳制冷剂的使用，将禁止使用氟氯化碳进行溢出和泄漏试验，精确的注入方式将有助于避免注入过程中的浪费，优良的焊接技术也将有助于降低泄漏。另外，回收和再循环技术的采用还将有助于利用回收的氟氯化碳进行维修，减少对新氟氯化碳的消耗。

120. 可以进行一项保守的估算，只要使用必要的工具和设备，家用制冷维修公司通过良性维修能够使氟氯化碳消耗量减少 50％。在实践中，可以合理地估计，这些行业中消耗氟氯化碳的大公司 要投资资源购买所需的工具和设备，或由政府支助进行购买。如果只有 50%的公司这样做，那么家用制冷维修行业中氟氯化碳消耗的净减少量将有望至少减少大约 25%。在工商业制冷维修行业 ，难以达到这一节约程度，因为维修网络分布太广，很难确定和集中关注氟氯化碳高消耗的公司。因此，培训的结果估计只能减少 15%的氟氯化碳消耗量。在冷风机方面，培训的结果估计也只能减少 15%的氟氯化碳消耗量。

121. 2003 年，制冷维修行业的氟氯化碳总消耗量共计 5,437 ODP 吨，根据下表所示的计划，这一数字将逐步下降，通过开展行业淘汰计划中的活动降低其消耗量。

制冷维修次级行业中氟氯化碳需求和消耗量减少的计划（ODP 吨）

次级行业	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
汽车空调维修(氟氯化碳-12)	1,434	1,303	1,139	946	674	384	220	73	18	5	0		
家用电器维修(氟氯化碳-12)	474	463	447	417	380	346	316	288	210	170	121	74	37
工业和商业制冷维修(氟氯化碳-12)	3,159	2,843	2,559	2,047	1,637	1,310	1,048	734	607	498	358	221	115
冷风机维修(氟氯化碳-11)	347	303	258	214	198	171	101	81	70	62	54	47	41
冷风机维修(氟氯化碳-12)	23	19	17	14	13	11	6	5	4	3	2	1	1
小计 (氟氯化碳-12)	5,090	4,628	4,162	3,424	2,704	2,051	1,590	1,100	839	676	481	296	153
小计 (氟氯化碳-11)	347	303	258	214	198	171	101	81	70	62	54	47	41
制冷维修行业需求共计	5,437	4,931	4,420	3,638	2,902	2,222	1,691	1,181	909	738	535	343	194
减少共计	0	506	511	782	736	680	531	510	272	171	203	192	149

122. 很明显，2010 年及以后，由于维修中现存使用氟氯化碳的制冷设备的需要，对氟氯化碳-12 仍有大量需求。同时，由于市场上缺乏氟氯化碳，终端用户可能会对现存的电器

进行改型，从而在维修制冷设备时使用其他的制冷剂来代替。对于大型商业制冷设备也许要采取同样的做法。对冷风机、冷藏机和工业制冷设备来说，也可采取改型以及早期报废方法。

增支成本

123. 下表对活动和增支成本进行了概括，估计总成本为 884 万美元。计划的主要组成部分为：技术人员的培训，包括为培训中心购买设备； 对汽车空调维修公司的硬件返修服务设备支助及建立再生中心；提高认识并制定适当的行业规范，监督和信息管理系统。在使用这些资金方面给予中国一定的灵活性，根据项目进展和所获经验，投入部分可以进行调整，以完全满足培训方面的需求。

项目	说明	机构	小计
监测和管理信息系统	信息管理系统设计，监测和培训，研发，恢复等	工发组织	140,000
协调、咨询、办事处设立，办公设备，本地服务，旅行，报告等		工发组织	100,000
当地国家机构管理能力培养		工发组织	100,000
政策制定和调查研究		工发组织	30,000
提高认识	提高公共认识的宣传册、CD、讲习班	工发组织	340,000
维修惯例规范	专家讲习班，以设计、检查并修改相关的惯例规范	日本	50,000
维修惯例规范	印刷规范并进行分发	日本	50,000
项目管理小计			**810,000**
30 个培训中心的设备	每个培训中心两套设备	日本	330,000
装备 1 个国家培训中心	用于培训教员	日本	55,000
编制培训材料	包括翻译和印刷	工发组织	80,000
培训教员	多个讲习班，培训教员	日本	280,000
培训费	3 天的培训，每名参加者的费用，教师费用，租借费，培训工具等	工发组织	2,250,000
在线培训		工发组织	20,000
加强职业学校	对应份额		0
技术人员培训小计			**3,015,000**
汽车空调硬件返修设备	因可用资金有限，只能资助一部分	日本	4,060,000
自报废汽车当地回收氟氯化碳的回收设备	包括储存	日本	150,000
废弃制冷剂回收中心		工发组织	350,000
应急费，10 %			456,000
硬件返修和再循环小计			**5,016,000**
日本小计			**4,975,000**
工发组织小计			**3,866,000**
项目总净费用			**8,841,000**
日本的机构支助费用	13%		**646,750**
工发组织的机构支助费用	7.50%		**289,950**
机构支助费用共计			**936,700**
日本共计			**5,621,750**
工发组织共计			**4,155,950**
总计			**9,777,700**

管理、监督和评价

124. 国家环保总局在实施中应起领导作用，与工发组织进行协商进行全面指导，。国家环保总局大气方案办公室（PMO）将监督一切活动。为保证相关的次级行业的有关利益方参与其中，将成立特别工作组（SWG），由国家环保总局、行业协会和相关部委的官员组成。主要行业协会包括中国汽车工业协会（CAAI）、中国家用电器行业协会（CHEAA）和中国制冷与空调行业协会（CRAA）。中国家用电器行业协会代表家用制冷行业，包括冰箱和冰柜的生产商及其维修站。中国制冷与空调行业协会代表工商业制冷行业和冷风机生产商及其维修站。中国汽车工业协会代表汽车生产商，包括汽车空调制造商和汽车空调维修站。主要相关部委应该由特别工作组代表，包括劳动部、交通部和国家工商总局。

秘书处的评论和建议

评论

125. 秘书处向工发组织表示，对第 5 条国家内制冷维修行业中氟氯化碳淘汰进行监测和报告极为困难。对制冷维修行业氟氯化碳消耗量的监测只有根据《蒙特利尔议定书》第七条在国家一级进行汇报的情况下才能进行。 秘书处建议，因为这个原因，根据包括了所有符合资助条件的剩余氟氯化碳消耗的国家氟氯化碳淘汰整体协议，提交中国制冷维修行业淘汰计划是非常有用的。

126. 《加速氟氯化碳淘汰计划》（APP）已经提交给第四十四次会议。该计划中某一特定年的全国总消耗量代表了全国氟氯化碳减少的目标。《制冷维修行业淘汰计划》（RSSPP）中提议的氟氯化碳减少计划是中国统一氟氯化碳减少计划的一部分。秘书处注意到，实现减少目标和对制冷维修行业淘汰计划的实施进程进行监督可以通过以下方式进行：综合考察每个行业的减少通过加速淘汰计划如何成为全国总体减少的一部分。工发组织表示，在协议中，《制冷维修行业淘汰计划》有关氟氯化碳消耗减少的目标将与《加速淘汰计划》中设定的总体允许的氟氯化碳消耗目标联系在一起。

127. 《制冷维修行业淘汰计划》将致力于淘汰全部制冷维修行业氟氯化碳消耗，其总量确定为 5,437 ODP 吨。中国其他符合资助条件的消耗到 2004 年 4 月达到 2,377.5 ODP 吨。中国政府获得了制冷维修行业淘汰计划符合资助条件的消耗总量的 1,437 ODP 吨。随着《制冷维修行业淘汰计划》获得批准，中国剩余符合资助条件的消耗量为 940.5 ODP 吨。

128. 在世界银行 2004 年的进度报告中，世界银行表示，中国有意根据商业制冷行业计划中的最终项目把资金重新分配给商业制冷维修活动。工发组织提交的《制冷维修行业淘汰计划》包括了各项活动以及对商业制冷维修次级行业的资助请求。秘书处向世界银行建议，向一直寻求资助的另一次级行业重新分配已批准的资金将构成双倍计算，除非考虑到将要实现的淘汰以及从中国剩余的符合资助条件的消耗中扣除。因此，世界银行应通知秘书处，同意划拨给商业制冷维修行业的未分配余额应用于与维修无关的其他活动。

129. 秘书处和工发组织讨论了将在中国当地生产的回收和再循环设备的单位成本。这一单位成本与国际供应商提供的相应设备成本相比，似乎高出预期。秘书处提请工发组织注意提高认识计划和培训计划的潜在重复性，以及原先批准的在中国开展政策培训项目的相关性。因此，秘书处建议削减申请的项目管理、监测、提高认识和政策制定部分的预算。秘书处和工发组织随后同意总增加成本为 7,885,000 美元，其中包括项目管理部分，该部分的申请额为 700,000 美元，占投资部分的 9.74%。预算的投资部分为 7,185,000 美元，成本效益为 5 美元/公斤。工发组织的机构支助费用为 192,800 美元，占 7.5%；日本政府为 520,000 美元，占 13%。

130. 基金秘书处于 2004 年 10 月 29 日收到了中国政府与执行委员会就完成制冷维修业中附件 A（第一组）物质淘汰而达成的协议草案。秘书处就协议草案中详细说明的独立核查消费限量和削减目标的方法向工发组织提出了质询。工发组织认为，只要中国政府提供的剩余制造行业氟氯化碳的消耗量的综合数据，就有可能核查制冷维修行业的消费量。工发组织与中国政府已经就上述方法展开讨论。由于《制冷维修行业淘汰计划》与《加速淘汰计划》之间的联系与削减目标的监测有关，协议草案的起草和建议的形成将视向执行委员会提交的《加速淘汰计划》评估文件是否完成而定。执行会员会将得到相应的信息。

建议

131. 待定。

2003/2004 年溶剂行业淘汰消耗臭氧层物质计划执行情况进度报告和 2005 年度执行方案

项目说明

背景

132. 开发计划署代表中国政府向执行委员会第四十四次会议提交了 2004 年进度报告 和 2005 年中国溶剂行业淘汰消耗臭氧层物质计划的执行方案。与前几期付款保持一致，2005 年度执行方案的供资数额为 59,761,625 美元（包括支助费用在内），本次会议上没有申请供资，但将列入开发计划署 2005 年业务计划中。

133. 第三十次会议上原则核准了中国溶剂行业计划，费用总额为 5,200 万美元。核准 2000 年至 2004 年（包括 2004 年）的头五期年度付款总额为 31,345,000 美元。

134. 淘汰工作是靠针对具体企业的投资活动和通过凭证制度管理的小型企业技术援助方案共同实现的。通过管制生产量和进口量保持了消费限量。减少生产量根据中国氟氯化碳和四氯化碳生产行业淘汰计划进行管制。自 2003 年 6 月 1 日以来，禁止将四氯化碳用作清洁溶剂。

通过投资项目和活动的淘汰

135. 国家环保总局和开发计划署通过 2001 年、2002 年和 2003 年发起的消耗臭氧层物质减少合同，并通过凭证制度下的新活动以及 2003 年发起的追补偿还和自行淘汰机制，继续开展企业一级的淘汰活动。

2003 年消耗臭氧层物质的淘汰活动

136. 按照协定的要求，中国必须在 2004 年年底之前淘汰 550 ODP 吨氟氯化碳-113 和 78 ODP 吨三氯乙烷。已经最后确定了 12 家企业的淘汰活动，2003 年 11 月签订了消耗臭氧层物质减少合同以淘汰 223 ODP 吨氟氯化碳-113 和 1.5 ODP 吨三氯乙烷。

137. 通过许可证制度，71 家中小型企业签约在 2004 年淘汰 142.37 ODP 吨氟氯化碳-113 和 8.21 ODP 吨三氯乙烷。

138. 除了消耗臭氧层物质减少合同和凭证制度，中国还同 143 家企业签订了协议，这些企业将直接完成 2004 年和 2005 年逐步淘汰氟氯化碳-113 的消费，在 2004 – 2009 年完成三氯乙烷的淘汰工作。2003 年签署的协议将淘汰总共 109.9 ODP 吨氟氯化碳-113 和 28.2 ODP 吨三氯乙烷，这将有助于完成 2004 年的淘汰指标。总之，共有 475.3 ODP 吨氟氯化碳-113、37.9 ODP 吨三氯乙烷将通过 2003 年最后确定的活动来淘汰。

139. 2003 年上半年爆发的 SARS 疫情使 2003 年方案延迟。但是，由于追补偿还和自行淘汰机制，淘汰记录上已有 142.1 ODP 吨氟氯化碳-113 和 37.9 ODP 吨三氯乙烷，这是对完成 2003 年淘汰指标的一个贡献。

2004 年消耗臭氧层物质的淘汰活动

140. 按照协定的规定，要求中国在 2005 年淘汰 550 ODP 吨氟氯化碳-113 和 85 ODP 吨三氯乙烷。2004 年的消耗臭氧层物质淘汰活动将通过以下活动来共同完成淘汰：消耗臭氧层物质减少合同、凭证制度、追补偿付机制和在 2003 年签订逐步自行淘汰协议的企业在 2005 年减少消费量。

141. 开发计划署项目呈件表 3 汇总了通过投资活动的淘汰进展摘要，转载如下。

表 3：通过 2000-2004 年消耗臭氧层物质减少合同、许可证制度、追补偿付和自行淘汰机制完成的淘汰

			氟氯化碳-113 (ODP 吨)	三氯乙烷 (ODP 吨)	四氯化碳 (ODP 吨)	企业数目	供资数额 (1,000 美元)
2000	今后淘汰的合同	计划的	372.8	10	0	10-20	$5,000
		签约的	378.4	10.1	8.36	16	$4,132
	完成的淘汰	执行中的项目	-	7.4	-		
		2000 年总淘汰量	-	7.4	-		
2001	今后淘汰的合同	计划的	524	10	0	10-20	$5,505
		签约的	541.6	10.6	0	21	$4,361
	完成的淘汰	执行中的项目	54.1	-			
		2000 年合同	340.1	9.8	8.36		
		2001 年总淘汰量	394.2	9.8	8.36		
2002	今后淘汰的合同	计划的	500	25	55	20-40	$5,830
		签约的	535.8	43.2	17.94	32	$4,004
	完成的淘汰	执行中的项目	291.3	41.7			
		2000 年合同	38.4	0.4	-		
		2001 年合同	-	-			
		2002 年总淘汰量	329.7	42.1	-		
2003	今后淘汰的合同	计划的	600	78	55	120-140	$5,255
		签约的	475.3	37.9	0	226	$5,100
	完成的淘汰	执行中的项目	-	-	-		
		2001 年合同	336.3	7.3			
		2002 年合同	-	-	-		
		2003 年活动 *	142.1	37.9			
		2003 年总淘汰量	478.4	45.2	-		
2004	今后淘汰的合同	计划的	550	85	-		$4,000
		签约的	767.3	119.7		216	$4,729
	完成的淘汰	2001 年合同	205.3	3.3			
		2002 年合同 +	108.6	18.3	16.5		
		2003 年活动					
		2004 年活动 *	49.4	9.8			
		2004 年总淘汰量	363.3	31.4	17.94		
五年累积总量	计划的淘汰		2,546.8	208	110		
	淘汰指标		2,750	197	110		
	完成执行中的项目和签订的合同之后完成的淘汰量		2,698.4	221.5	26.3		
	实际完成的淘汰量+		1,565.6	135.9	26.3		

* 通过追补偿付和逐步自行淘汰活动。

+ 截至 2004 年 9 月完成的淘汰量。

142. 开发计划署指出，计划的淘汰量与实际的淘汰量有差异的原因是：

- 淘汰记录方面的延迟，实际上记录工作是在完成必要的全部行政程序宣布项目完成之后进行的。
- 履约期间和项目完成之前的逐步淘汰，致使国家一级的消费减少量高于企业一级记录的淘汰量。

许可证制度

143. 2003 年 6 月推出实行凭证制度，作为在成都、广州和陕西省三家中间执行机构的试点。此后，中间执行机构网扩大到八个，从签约参加的中小型企业的数量上就能看出该制度取得了成功，中小型企业从 2003 年的 71 家增至 2004 年的 167 家。自 2005 年起，凭证制度将成为影响所有小型消耗臭氧层溶剂消费企业的重要机制。

政策措施

144. 自 2000 年 3 月执行溶剂行业计划以来，中国颁布并有效地执行了政策行动以管制生产配额和用作溶剂的氟氯化碳-113、三氯乙烷和四氯化碳的销售。根据 2002 年取得的经验，中国洗净工程技术合作协会向消耗臭氧层物质生产商和消费企业颁发了 2003 年 8 月至 12 月的消耗臭氧层物质使用证书。2003 年 12 月，颁发的 2004 年使用证书规定的数量符合 2004 年淘汰指标的要求。此外，该通知也要求消耗臭氧层物质的生产厂家、经销商和进口商向中国洗净工程技术合作协会报告其消耗臭氧层物质的生产、销售、消费情况及所有用户的名称。

145. 2004 年 9 月 13 日，国家环保总局向所有行业，包括溶剂行业发布了“消耗臭氧层物质替代品的推荐通知（第一份清单）”。

技术援助活动

146. 2003 年 6 月为国内专家、中间执行机构和候选企业举办了培训活动，2004 年为新学员再度举办这种培训。此外，还为独立审计员举办了培训，他们要进行财务和管理审计以及绩效核查。

147. 替代技术实验和生产一级的试验在继续进行，并且制订了非消耗臭氧层物质清洗技术应用标准。目前正在制订替代溶剂综合战略。以合理的价格供应当地生产的优质替代溶剂，成为确保淘汰工作顺利进行的一项重要要求。为此，中国将继续探讨和促进当地生产的替代品的研发。

148. 溶剂行业计划是通过印刷媒体、广播和电视宣传的。某家网站也在积极运行，以促进消耗臭氧层物质淘汰活动的执行，宣传重要政策、淘汰计划和替代技术及促进国内、国

际和企业专家交流技术。2004 年 8 月在上海举办了第二届国际清洗技术论坛和展览会。

2003 年淘汰指标的核查

149. 根据自国家环保总局获取的生产和进出口的官方数据和统计资料，2003 年全国的氟氯化碳-113 和三氯乙烷消费量达到了协定表 A 中规定的淘汰指标。氟氯化碳生产数字与世界银行提交执行委员会的氟氯化碳生产行业计划中报告的已审计数据相同。进出口数据是从官方海关记录中得到的数据。根据与所有以前的年度报告中使用的相同的统计抽样，用于溶剂清洗的四氯化碳的全国消费量定为 5.53 ODP 吨。这与 2003 年 6 月 1 日生效的禁止消费四氯化碳用于溶剂清洗目的的要求一致。有理由得出以下的结论：2003 年用作清洗溶剂的四氯化碳的全国消费量没有超过 55 ODP 吨的限量。

150. 通过审计核查这些数字，是由受国家环保总局和开发计划署委托的一家独立会计事务所－北京天华正会计师事务所完成的。审计员的审计工作依据中国国家审计局的氟氯化碳-113 生产审计报告、政府的官方进出口数据和三氯乙烷生产商报告的数据以及成为四氯化碳潜在用户的企业的上述统计抽样进行。方法与以前的绩效核查审计所使用的方法相似。

151. 开发计划署的项目呈件表 4 中列示了 2003 年氟氯化碳-113、三氯乙烷和四氯化碳的全国消费量，转载如下：

表 4：2003 年消耗臭氧层溶剂的消费量（ODP 吨）

	氟氯化碳-113	**三氯乙烷**	**四氯化碳**
	ODP **吨**	ODP **吨**	ODP **吨**
消费管制指标	**1,700**	**580**	**55**
生产	1699.94	86.8	
进口	-	250.0	
出口	23.2	-	
用作原材料	0	0	
溶剂消费量	**1,676.74**	**336.8**	**<55**

152. 按照协定的要求，将四氯化碳用作给料、加工剂或未核准为消耗臭氧层物质加工剂的其他用途的所有企业的名称，以及 2003 年每家企业的使用量都要列入进度报告中。总数量是 45,041 ODP 吨，在 71,500 ODP 吨的规定限量内。

153. 总共有 17.1 ODP 吨氟氯化碳-113 作为加工剂消费，有 383 ODP 吨作为制造氟氯化碳-115 的化学中间产品消费。该协定规定，用作给料的氟氯化碳-113 限量为 10 ODP 吨。开发计划署指出，中国已经向执行委员会第四十二次会议报告，进行限制确保“氟氯化碳-113 不会转移用作溶剂”的意图已由氟氯化碳生产行业报告核实，该报告确认了上述用作加工剂和化学中间产品的总量。

绩效审计

154. 审计员还审查了淘汰活动的执行情况和 2003 年企业一级完成的淘汰以及其他政策和技术活动的执行情况。

155. 在企业一级，绩效审计报告找出了履约延迟的主要原因，这包括对选定的替代溶剂不满意。审计员建议有关各方应该继续支持解决这个问题，并着重指出需要以合理的价格供应当地生产的优质替代溶剂。但是，审计员还认识到 2002 年、2003 年和 2004 年头七个月企业一级的消耗臭氧层物质消费量在逐年减少，并认为消费量总体上在逐年减少，淘汰活动正得到顺利执行。

156. 绩效核查也证实政策和技术援助活动得到执行，并注意到所有使用消耗臭氧层物质溶剂的企业都拥有许可证并且按照其配额购买了消耗臭氧层物质溶剂，这表明国家环保总局执行的政策产生了有效的作用。另外还注意到，早在禁令生效日期 2003 年 6 月 1 日之前，剩余的 21 家四氯化碳消费企业不再将四氯化碳用作清洁溶剂消费，这表明该项政策措施也产生了效果。

技术审计

157. 2004 年 9 月，开发计划署的国际和国内溶剂行业专家小组根据 2002 年消耗臭氧层物质减少合同，对 32 家企业中的 8 家进行了技术评价。小组发现全部 8 家企业都遇到了设备采购延迟问题，并且注意到对于更复杂的项目来说标准的 18 个月项目期限是不够的。技术审计员建议：在确定新设备的规格和制造新设备时需要加强交流；在淘汰之后需要继续进行技术转让；需要编制设计开发的文件；以及确保较便宜的替代溶剂的效力。

2005 年度执行方案

158. 中国政府还将 2005 年执行方案提交执行委员会审批。建议淘汰 550 ODP 吨氟氯化碳-113 和 85 ODP 吨三氯乙烷，以促进完成协定中规定的 2005 年消费管制限量。2003 年和 2004 年发起的淘汰活动也有助于完成 2005 年的淘汰指标。在减少 550 ODP 吨氟氯化碳-113 之后，中国将在 2006 年 1 月 1 日之前彻底淘汰用作清洗溶剂消费的氟氯化碳-113。为了完成这一指标，将在 2005 年初开展活动。

159. 2005 年度履约方案中还列入了必要的技术援助活动、立法措施和监测及执行机制，其中涵盖加强将参与淘汰活动的企业的财务管理和行政管理培训，以确保适当利用多边基金的资金和次级项目的有效管理。此外，将加强溶剂工作组的监督和监测职能。

160. 以下各表列示了建议 2005 年进行的投资和技术援助活动。

淘汰活动	淘汰量			
	氟氯化碳-113（ODP 吨）	三氯乙烷（ODP 吨）	四氯化碳（ODP 吨）	企业数目
完成 2002 年消耗臭氧层物质减少合同 - 在 2005 年 5 月之前启动和销毁剩余两家企业的基准设备	133.8	9.4	-	2
完成 2003 年消耗臭氧层物质减少合同（12 家）、凭证制度（71 家中小型企业）、逐步自行淘汰（143 家）和偿付机制 - 依据 2003 年消耗臭氧层物质减少合同，完成设备采购、供货、安装、启动和销毁 12 家企业的基准设备； - 依据凭证制度 71 家中小型企业完成淘汰活动； - 核查签订了逐步淘汰协议的 143 家企业议定的溶剂减少量； - 确定自费完成淘汰活动的企业，核查接受资助的资格和淘汰量并处理追补偿付	333.2	-	-	226
继续执行 2004 年淘汰活动：31 份消耗臭氧层物质减少合同、凭证制度下的 167 家企业和追补偿付机制下的 18 家企业： - 完成设备采购、交货、安装、启动和销毁基准设备； - 依据凭证制度完成的淘汰活动； - 核查签署了逐步淘汰协议的 167 家企业的议定溶剂减少量； - 核查接受资助的资格和淘汰量，处理追补偿付	767.3	119.7	-	216
开展 2005 年的淘汰活动 - 通过凭证制度和追补偿付机制，确定参与淘汰活动的三氯乙烷消费者和所有剩余的氟氯化碳-113 消费者； - 继续确定逐步自行淘汰的企业并最终确定协议	*	*		
2005 年完成的总淘汰量	**1,234.3**	**214.1**	**-**	
2005 年淘汰指标	**550**	**85**	**0**	

- 2005 年的淘汰活动，以在 2006 年淘汰 550 ODP 吨氟氯化碳-113 和 85 ODP 吨三氯乙烷。

技术援助活动	说明	
建立溶剂行业的淘汰消耗臭氧层物质和非消耗臭氧层物质清洗技术应用的全国培训中心	目标	举办非消耗臭氧层物质清洗技术应用和溶剂方面的培训
	目标群体	企业技术人员、国内专家、专业人员
	影响	加深对现有的非消耗臭氧层物质清洗技术应用的了解
公众认识	目标	在溶剂行业开展和推广全国淘汰消耗臭氧层物质活动以引起关注和参与。
	目标群体	正规和非正规企业的小型溶剂消费者
	影响	提高人们的认识和参与兴趣
替代溶剂的支助使用	目标	为了确保淘汰活动的结果并避免企业在完成淘汰之后又转用消耗臭氧层物质
	目标群体	转用非消耗臭氧层物质清洗技术的企业和可能参与淘汰活动的企业
	影响	维持非消耗臭氧层物质的转用
研究必要用途	目标	满足 2010 年之后对备用替代品的需要
	目标群体	需要某些消耗臭氧层溶剂的研究所和企业
	影响	均衡管理消耗臭氧层物质的用途
打击消耗臭氧层物质的进口、非法生产和非法消费的方案	目标	确保有效监测和实施消耗臭氧层物质的用途
	目标群体	地方环保局、海关当局
	影响	对付消耗臭氧层物质的非法生产和用途的有效机制
研究医用设备清洗技术应用的替代技术	目标	使行业获得非消耗臭氧层物质的清洗应用技术
	目标群体	研究所和次级部门的专家及企业
	影响	促进顺利且成功地转向非消耗臭氧层物质清洗技术
研究电路板清洗技术应用的替代品	目标	满足对电路板清洗替代品的需求
	目标群体	改用非消耗臭氧层物质清洗技术的电子企业
	影响	维持转用非消耗臭氧层物质

2005 年预算

161. 2005 年度执行方案所需的总数额为 5,680,000 美元加开发计划署支助费用 426,000 美元。在提交的提案中，申请执行委员会第四十四次会议核准 2005 年付款的供资数额。随后，秘书处向开发计划署澄清，按照以前的惯例和该协定，将在 2005 年第一次会议，即第四十五次会议上寻求供资。支出明细表如下。

活动	计划支出（美元）
企业一级的淘汰活动 - 凭证制度、追补偿付和逐步自行淘汰机制	4,280,000
技术援助 - 国家培训中心（500,000 美元） - 公众认识（100,000 美元） - 替代溶剂的支助使用（100,000 美元） - 必要用途的研究（20,000 美元） - 打击消耗臭氧层物质的生产、非法进口和非法消费方案 （350,000 美元） - 标准和技术规格（100,000 美元） - 电路板的替代品研究（100,000 美元） - 培训和绩效审计（30,000 美元） - 国际和国内技术专家（100,000 美元）	1,400,000
共计	**5,680,000**

秘书处的评论和建议

评论

162. 根据进度报告中提供的情况，包括核查审计，中国达到了氟氯化碳-113、三氯乙烷和四氯化碳协定中规定的消费限额。中国还基本执行了 2004 年度执行计划中预示的技术援助和政策活动方案。因此协定中的主要绩效要求都已经达到。

163. 企业一级的实际淘汰量仍比计划低得多。该年度进度报告说明了其原因和国家环保总局完成的绩效及技术审计，中国就相关的技术和履约问题提出建议。与前几年相同，企业一级的淘汰量低于计划数量没有影响中国达到消费限量的能力。

164. 氟氯化碳-113 作为给料或化学中间产品的消费量仍然超过协定中规定的 10 ODP 吨。中国指出，提交给执行委员会第四十二次会议的报告中解释说，氟氯化碳生产行业报告已经证实了限制用作给料以确保 “氟氯化碳-113 不被用作溶剂”这一意图。第四十二次会议在此基础上核准了 2004 年付款的供资。

165. 2005 年度执行计划提供了消费限量方面要求的数据、淘汰指标、逐个方案的技术援助活动以及政府行动，提供了技术援助方案的预算明细表，但没有列入年度方案和项目报

告中以前使用的单独的绩效指标表。其中的资料重复了表 3 中提供的企业一级淘汰活动资料和说明中的技术援助和政府行动资料，该表不再是这些报告的必要组成部分。

建议

166. 谨提议执行委员会赞赏地注意到中国政府和开发计划署提交的 2003/2004 年中国溶剂行业淘汰消耗臭氧层物质计划的执行进度报告并核准 2005 年度执行方案，其供资将在第四十五次会议上申请。

Report On Foam Sector 2004 Annual Program Verification Mission

July 2004

Purpose of verification

1. Under the EXCOM's approval of the "Agreement for CFC Phase-out in the Polyurethane foam sector in China"(UNEP/Ozl.Pro/EXCOM/35/19, Decision and Annex), China was required to phaseout 2,500MT of CFC -11 consumption in 2004 in the PU foam sector. The Bank is required to carry out verification of a minimum of 15% of the activities covering a minimum of 15% of CFC11 consumption. The number of enterprises selected and phase out target of those enterprises selected for this verification exceed 15% of number of enterprises and annual phase out target respectively.

Target of verification

2. Dalian Fishing Machinery Co. Ltd. and Beijing Zhonghai Runda Co. Ltd. are two leading companies (coordinators) for two of the five contracts signed under 2004 annual program for phasing out CFC-11 in polyurethane rigid and flexible foam sub-sectors.

3. There are fifteen enterprises under the coordination of Dalian Fishing Machinery Co. Ltd. and Beijing Zhonghai Runda Co. Ltd.. Dalian group has seven enterprises located in Liaoning Province. Beijing group has eight enterprises located in Beijing, Tianjin and Hebei Province. The names of these fifteen enterprises are as follow:

- Dalian Zhongshan Insulation Pipe Plant
- Dalian Zhongda Refrigeration Equipment Co. Ltd.
- Dalian Xingsheng Insulation Material Plant
- Lushun Insulation Material Plant
- Dalian Binshan Group Co. Ltd.
- DEDZ Polyurethane Foam Corporation
- Dalian Fishing Machinery Co. Ltd.
- Beijing Zhonghai Runda Co. Ltd.
- Beijing Xinxing Tiandi Insulation Material Co. Ltd.
- Beijing Direct Insulation Pipe Plant
- Hebei Jiangfeng Pipe Co. Ltd.
- Tianjin Xiatong Refrigeration Equipment Co. Ltd.
- Tianjin Yuesheng New Material Research Institute
- Tianjin Lifeng Development Co. Ltd.
- Chengde Hongxing Refrigeration Equipment Co. Ltd.

4. For number and consumption of these fifteen enterprises all exceed ExCom's requirement for verification, these fifteen enterprises are selected as target for 2004 foam sector verification mission.

Scope of verification

5. The World Bank terms of reference requires the mission to verify the following aspects of the fifteen enterprises:

- Date of establishment
- Number of employees
- Industrial and commercial registration of the enterprises
- Types of foam products
- Technical data of each type of foam product
- Annual production and sales figures of 2002 and 2003
- Annual CFC consumption of 1999, 2001,2002 and 2003
- Baseline equipment (Including date of manufacture, date of installation, brand, model, serial number, capacity, purchase price and current working condition)
- Status of production and machinery

Result of verification

6. 2004 annual program verification mission visited the fifteen enterprises and was able to verify the following aspects of those enterprises:

- Date of establishment
- Number of employees
- Industrial and commercial registration of the enterprises
- Types of foam products
- Technical data of each type of foam product
- Annual production and sales figures of 2002 and 2003
- Annual CFC consumption of 1999, 2001,2002 and 2003
- Baseline equipment (Including date of manufacture, date of installation, brand, model, serial number, capacity, purchase price and current working condition)
- Status of production and machinery

7. The mission has reached the following conclusion after the verification.

- All enterprises were established before July 25, 1995
- Most foaming equipment was installed before July 25, 1995. Some enterprises have foaming equipment installed after July 1995. The mission concluded that as foaming equipment in China especially locally made foaming equipment have short life time, the replacement rate of foaming equipment is high;
- Total consumption of CFC-11 of these fifteen enterprises in 1999 (baseline year) was 900.29 tons;
- Many enterprises are using CFC-11 and HCFC-141b simultaneously, a sign of increasing demand of non-CFC products. Two enterprises mistakenly recorded some of its HCFC-141b consumption as CFC-11 consumption. The CFC-11 consumption of those two enterprises have been corrected accordingly;
- Some enterprises also have preblended polyol business, the mission checked relevant financial records to avoid doubt-counting;

- Beijing Zhonghai Runda Co. Ltd., as a coordinator for Beijing Group Project, does not consume CFCs.

Table 1. Consumption of CFC-11 of 15 Enterprises **Unit: ton**

	1999	2001	2002	2003
Dalian Zhongshan Insulation Pipe Plant	40.5	50.3	46.7	32
Dalian Zhongda Refrigeration Equipment Co. Ltd.	37.85	47.75	33.52	41.81
Dalian Xingsheng Insulation Material Plant16.63	16.63	20.68	23.58	8.02
Lushun Insulation Material Plant	15	15.05	7.5	14
Dalian Binshan Group Co. Ltd.	77.15	87.75	88	18.25
DEDZ Polyurethane Foam Corporation22.17	22.17	24	32.5	31.25
Dalian Fishing Engine Industry Corporation	92	109.71	107.47	73
Beijing Zhonghai Runda Co. Ltd.	0	0	0	0
Beijing Xinxing Tiandi Insulation Material Co. Ltd.	68.11	85.13	86	72.14
Beijing Direct Insulation Pipe Plant	108.98	112.02	107.94	112.36
Hebei Jiangfeng Pipe Co. Ltd.	123.85	109.24	120.88	118.02
Tianjin Xiatong Refrigeration Equipment Co. Ltd.	21.63	25.72	69.86	36.25
Tianjin Yuesheng New Material Research Institute	49	59.59	62	45
Tianjin Lifeng Development Co. Ltd.	110.67	124.25	129.31	126.29
Chengde Hongxing Refrigeration Equipment Co. Ltd.	116.75	124.24	125.07	101.06
Total	900.29			

8. Detailed information about each enterprise can be checked in individual report for each enterprise.

Dalian Zhongshan Insulation Pipe Plant

Enterprise Background

9. Dalian Zhongshan Insulation Pipe Plant (Zhongshan) was established in 1993. Zhongshan has 15 employees and mainly produces pipe-in-pipe for district heating. Zhongshan has two foaming machines. One is a low pressure foam dispenser (output 50 kg/min) made by Leqing. The other is a low pressure foam dispenser (output 120 kg/min) made by Leqing. Both machines were installed in 1993.

10. Name of the director and his contact information are as follow:

Xianyu Lu
Telephone: 86-130-1948-2017
Fax: None
Address: 143 Lesheng Street, Hekou District, Dalian 116023, China

Verification

11. The World Bank mission has taken the following verification steps at Zhongshan:

- Listened to Mr. Lu's introduction of Zhongshan and production of foam products;
- Checked and copied Zhongshan's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian Zhongshan Insulation Pipe Plant was established before July 1995;
- Zhongshan has two foaming machines. Both installed before July 1995;
- Zhongshan consumed 40.5 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 50.3 tons, 46.7 tons, and 32 tons respectively;
- Production of foam in 2002 and 2003 are 377 tons and 214.4 tons respectively.

Table 2. 1999 Zhongshan Procurement Record of CFC-11

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.4.8	6	Dalian Fuda Polyurethane Co.	0264999
2	1999.8.30	7	Dalian Fishing Machinery Co.	0717808
3	1999.9.26	6.8	Dalian Fishing Machinery Co	0717812
4	1999.10.6	7.75	Dalian Fishing Machinery Co	0717814
5	1999.10.30	7.2	Dalian Fishing Machinery Co	0717816
6	1999.11.3	5.75	Dalian Fishing Machinery Co	0717818
	Total	40.5	Dalian Fishing Machinery Co	

Dalian Zhongda Refrigeration Equipment Co. Ltd.

Enterprise Background

12. Dalian Zhongda Refrigeration Equipment Co. Ltd. (Zhongda) was established in May 1995. Zhongda has 26 employees and mainly produces spraying foam for cold storage and fishing boats. Zhongda has four foaming machines. The high pressure spray foam machine (output: 8 kg/min) made by Glas-Craft was installed in 1998. Three low pressure spray foam machines locally made were installed in 1995, 1996, and 1998 respectively.

13. Name of the director and his contact information are as follow:

Chunzhong Mu
Telephone: 86-411-440-7919
Fax: 86-411-440-7098
Address: 70 Huaxin Road, Ganzi District, Dalian 116039, China

Verification

14. The World Bank mission has taken the following verification steps at Zhongda:

- Listened to Mr. Mu's introduction of Zhongda and its spray foam business;
- Checked and copied Zhongda's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian Zhongda Refrigeration Equipment Co. Ltd. was established before July 1995;
- Zhongda has four foaming machines. One installed before July 1995 and the others after;
- Zhongda consumed 37.85 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 47.75 tons, 33.52 tons, and 41.81 tons respectively;
- Production of foam in 2002 and 2003 are 295.6 tons and 326.19 respectively.

Table 3. 1999 Zhongda Procurement Record of CFC-11

	Date	Amount (ton)	Supplier	Invoice Number
1	1/18	0.5	Dalian Fishing Machinery Co	8267
2	2/3	2.5	Dalian Fishing Machinery Co	4605
3	3/11	0.5	Dalian Fishing Machinery Co	4612
4	4/20	0.5	Dalian Fishing Machinery Co	9142
5	5/5	1	Dalian Fishing Machinery Co	9165
6	5/5	1.25	Dalian Fishing Machinery Co	9167
7	5/31	0.75	Dalian Fishing Machinery Co	4996
8	5/31	0.25	Dalian Fishing Machinery Co	4991
9	6/14	0.25	Dalian Fishing Machinery Co	5002
10	6/14	0.41	Dalian Fishing Machinery Co	5004
11	7/20	0.25	Dalian Fishing Machinery Co	7554
12	7/20	1.75	Dalian Fishing Machinery Co	5025
13	7/20	2	Dalian Fishing Machinery Co	5023
14	8/1	2.75	Dalian Fishing Machinery Co	7571
15	8/1	0.25	Dalian Fishing Machinery Co	7569
16	9/24	0.5	Dalian Fishing Machinery Co	3303
17	9/24	2.5	Dalian Fishing Machinery Co	3304
18	9/24	2.5	Dalian Fishing Machinery Co	3301
19	9/24	0.75	Dalian Fishing Machinery Co	3307
20	10/11	0.75	Dalian Fishing Machinery Co	1152
21	10/11	1	Dalian Fishing Machinery Co	3315
22	11/15	0.6	Dalian Fishing Machinery Co	4780
23	11/15	0.475	Dalian Fishing Machinery Co	4777
24	11/15	0.5	Dalian Fishing Machinery Co	4783

25	10/11	1.75	Dalian Fishing Machinery Co.	1155
26	10/11	0.75	Dalian Fishing Machinery Co.	3323
27	10/11	0.3	Dalian Fishing Machinery Co.	3319
28	10/11	0.2	Dalian Fishing Machinery Co.	3318
29	11/15	1.5	Dalian Fishing Machinery Co.	4785
30	12/31	0.75	Dalian Fishing Machinery Co.	0006
31	12/31	0.5	Dalian Fishing Machinery Co.	6225
32	12/31	1.5	Dalian Fishing Machinery Co.	0008
34	12/31	0.75	Dalian Fishing Machinery Co.	0004
35	12/31	0.75	Dalian Fishing Machinery Co.	6222
36	12/31	4.61		
	Total	37.845		

Dalian Xingsheng Insulation Material Plant

Enterprise Background

15. Dalian Xingsheng Insulation Material Plant (Xingsheng) was established in June 1995. Xingsheng has 17 employees and mainly produces pipe-in-pipe for district heating and petrochemical industry. Xingsheng does not have any foaming equipment. It produces pipes with manual mixing of polyols.

16. Name of the director and his contact information are as follow:

Guoyu Yang
Telephone: 86-411-640-0786
Fax: None
Address: Changzhenbao, Ganzi District, Dalian 116035, China

Verification

17. The World Bank mission has taken the following verification steps at Xingsheng:

- Listened to Mr. Yang's introduction of Xingsheng and production of foam products;
- Checked and copied Xingsheng's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian Xingsheng Insulation Material Plant was established before July 1995;
- Xingsheng does not have foaming equipment;
- Xingsheng consumed 16.63 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 20.68 tons, 23.58 tons, and 8.02 tons respectively;
- Production of foam in 2002 and 2003 are 251 tons and 64.16 tons respectively.

Table 4. 1999 Xingsheng CFC-11 Procurement Record

	Date	Amount (ton)	Supplier	Invoice Number
1	5/27	0.25	Dalian Chaofan Trade Co.	00303533
2	6/10	6	Dalian Chaofan Trade Co.	00607545
3	9/24	0.5	Dalian Chaofan Trade Co.	00362741
4	12/27	6.88	Dalian Chaofan Trade Co.	00616144
5	12/31	3		
	Total	16.63		

Lushun Insulation Material Plant

Enterprise Background

18. Lushun Insulation Material Plant (Lushun) was established in 1992. It has 5 employees and mainly produces pipe-in-pipe for district heating. Lushun has two foaming machines. Both of them low pressure spray foam machine with an output of 1 kg/min. Both machines were installed in 1993.

19. Name of the director and his contact information are as follow:

Xinqi Han
Telephone: None
Fax: None
Address: Sanji County, Lushun, Dalian 116043 , China

Verification

20. The World Bank mission has taken the following verification steps at Lushun:

- Listened to Mr. Han's introduction of Lushun and production of foam products;
- Checked and copied Lushun's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Lushun Insulation Material Plant was established before July 1995;
- Lushun has two foaming machines. Both installed before July 1995;
- Lushun consumed 15 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 15.05 tons, 7.5 tons, and 14 tons respectively;
- Production of foam in 2002 and 2003 are 261 tons and 112 tons respectively.

Table 5. 1999 Lushun CFC-11 Procurement Record

	Date	Amount (ton)	Supplier	Invoice Number
1	4/17	0.5	Dalian Fishing Machinery Co.	00489139
2	5/25	10	Dalian Fishing Machinery Co.	0372859
3	9/24	2	Dalian Chaofan Trade Co.	00362740
4	11/1	2	Dalian Fuda Polyurethane Plant	00389312
5	12/4	0.5	Dalian Fishing Machinery Co.	00080980
	Total	15		

Dalian Binshan Group Co. Ltd.

Enterprise Background

21. Dalian Binshan Group Co. Ltd. (Bingshan) was established in 1994. Bingshan has 11 employees and mainly doing spray foam for fishing boats. Bingshan has one Glas-Craft high pressure spray foam machine installed in 1998.

22. Name of the director and his contact information are as follow:

Yanjin Miao
Telephone:86-411-441-9799
Fax: None
Address: , China

Verification

23. The World Bank mission has taken the following verification steps at Bingshan:

- Listened to Mr. Miao's introduction of Bingshan and its contract with fishing boat plants;
- Checked and copied Bingshan's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian Bingshan Group Co. Ltd. was established before July 1995;
- Bingshan has one foaming machine installed after July 1995;
- Bingshan consumed 77.15 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 87.75 tons, 88 tons, and 18.25 tons respectively;
- Production of foam in 2002 and 2003 are 702 tons and 131.4 tons.

Table 6. 1999 Bingshan Procurement Record of Preblended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	3/25	20	Dalian Fishing Machinery Co.	0555653
2	3/29	35	Dalian Fishing Machinery Co.	0555654
3	4/1	35	Dalian Fishing Machinery Co.	0555656
4	4/29	12.5	Dalian Fishing Machinery Co.	0555658
5	5/8	37.5	Dalian Fishing Machinery Co.	0555659
6	5/25	38.5	Dalian Fishing Machinery Co.	0555660
7	6/20	39	Dalian Fishing Machinery Co.	0555661
8	7/19	30	Dalian Fishing Machinery Co.	0555662
9	7/25	32.5	Dalian Fishing Machinery Co.	0555663
10	8/5	39	Dalian Fishing Machinery Co.	0555664
	Total Preblended Polyol	319		
	Total CFC-11	77.15		

DEDZ Polyurethane Foam Corporation

Enterprise Background

24. DEDZ Polyurethane Foam Corporation (DEDZ) was established in 1993. Zhongshan has 55 employees and mainly produces pipe-in-pipe for district heating. DEDZ has four foaming machines. Two were installed before July 1995 and two after. Two machines installed before July 1995 are low pressure spray foam machines (output 4kg/min) made by Leqing. Two machines installed after July 1995 are low pressure foam dispensers (output 150kg/min) made by Leqing.

25 Name of the director and his contact information are as follow:

Jifa Zheng
Telephone: 86-1390-411-6767
Fax: 86-411-763-8870
Address: 16 Qingsongbeili, Dalian 116600, China

Verification

26. The World Bank mission has taken the following verification steps at DEDZ:

- Listened to Mr. Zheng's introduction of DEDZ and production of foam products;
- Checked and copied DEDZ's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian DEDZ Insulation Pipe Plant was established before July 1995;
- DEDZ has four foaming machines. Two were installed before July 1995 and two after;
- DEDZ consumed 22.17 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 24 ton, 32.5 tons, and 31.25 tons respectively;
- Production of foam in 2002 and 2003 are 263tons and 203.13 tons respectively.

Table 7. 1999 DEDZ CFC-11 procurement Record

	Date	Amount (ton)	Supplier	Invoice Number
1	4/15	0.25	Dalian Chaofan Trade Co.	00303556
2	6/28	8.2	Dalian Fishing Machinery Co.	0717817
3	9/27	2	Shenyang Yongxing Trade Co.	0069491
4	11/17	1.5	Tianjin Huawen Polyurethane	00921050
5	11/24	3	Shenyang Yongxing Trade Co.	003368888
6	12/31	7.22		
	Total	22.17		

Dalian Fishing Machinery Co. Ltd.

Enterprise Background

27. Dalian Fishing Machinery Co. Ltd. (Dalian Fishing) was established in 1979. Zhongshan has 50 employees and mainly produces insulation foam for fishing boats. Dalian Fishing has twelve foaming machines. Among twelve machines, four were installed before July 1995 and eight after. Six machines are out of service and six are in service during the visit. These six machines in service are all spray foam machines installed after July 1995.

28. Name of the director and his contact information are as follow:

Mingfu Yan
Telephone: 86-411-254-1356
Fax: None
Address: , China

Verification

29. The World Bank mission has taken the following verification steps at Dalian Fishing:

- Listened to Mr. Yan's introduction of Dalian Fishing and its insulation foam for fishing industry;
- Checked and copied Dalian Fishing's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Dalian Fishing Machinery Co. Ltd. was established before July 1995;
- Dalian Fishing has twelve foaming machines. Four were installed before July 1995 and eight after;
- Dalian Fishing consumed 92 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 109.71 tons, 107.47 tons, and 73 tons respectively;
- Production of foam in 2002 and 2003 are 858.2 tons and 547.5 tons respectively.

Table 8. 1999 Dalian Fishing procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1/25	3	Dalian Fishing Machinery Co.	0372851
2	2/7	5	Dalian Fishing Machinery Co.	0372853
3	3/8	8	Dalian Fishing Machinery Co.	0372856
4	5/30	7	Dalian Fishing Machinery Co.	0372860
5	6/8	9	Dalian Fishing Machinery Co.	0372863
6	6/13	3	Dalian Fishing Machinery Co.	0372866
7	6/25	6	Dalian Fishing Machinery Co.	0372868
8	7/30	3	Dalian Fishing Machinery Co.	0372876
9	7/30	4	Dalian Fishing Machinery Co.	0372877
10	9/25	8	Dalian Fishing Machinery Co.	0372882
11	9/27	5	Dalian Fishing Machinery Co.	0372888
12	10/15	5	Dalian Fishing Machinery Co.	0372893
13	11/3	4.5	Dalian Fishing Machinery Co.	0372901
14	11/20	6	Dalian Fishing Machinery Co.	0372904
15	12/25	7.5	Dalian Fishing Machinery Co.	0372909
16	12/30	8	Dalian Fishing Machinery Co.	0372912
	Total	92		

Beijing Zhonghai Runda Co. Ltd.

Enterprise Background

30. Beijing Zhonghai Runda Co. Ltd. (Zhonghai) was established in 1997. It has 42 employees and mainly does research on polyurethane products.

31. Name of the director and his contact information are as follow:

Ge Feng
Telephone: 86-10-6216-6988
Fax: 86-10-6216-6868
Address: 48 Nandajie, Haidian District, Beijing 100081, China

Verification

32. The World Bank mission has taken the following verification steps at Zhonghai:

- Listened to Mr. Feng's introduction of Zhonghai;
- Checked and copied Zhonghai's Industrial and Commercial Registration (License);

Conclusion

- Beijing Zhonghai Runda Co. Ltd. was established in 1997;
- Zhonghai currently does not produce polyurethane products, nor consume any CFCs.

Beijing Xinxing Tiandi Insulation Material Co. Ltd.

Enterprise Background

33. Beijing Xinxing Tiandi Insulation Material Co. Ltd. (Xinxing) was established in 1990. It has 50 employees and mainly produces pipe-in-pipe for civil and petroleum industries. It has two foaming machines. The high pressure foam dispenser (output: 140 kg/min) made by Yanjin was installed in 1999. The low pressure spray foam machine produced by Yanjin was procured in April 1995.

34. Name of the director and his contact information are as follow:

Yuanli Yao
Telephone: 86-10-6771-6540
Fax: 86-10-6774-9335
Address: Fanjifen Village, Chaoyang District, Beijing 100022, China

Verification

35. The World Bank mission has taken the following verification steps at Xinxing:

- Listened to Mr. Yao's introduction of Xinxing and its production of foam products;
- Checked and copied Xinxing's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Beijing Xinxing Tiandi Insulation Material Co. Ltd. was established before July 1995;
- Xinxing was in normal production of polyurethane foam pipes;
- Xinxing has two foaming machines. One installed before July 1995 and the other after;
- Xinxing consumed 68.11 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 85.13 tons, 86 tons, and 72.14 tons respectively.
- Production of foam in 2002 and 2003 are 561.53 tons and 469.62 tons.

Table 9. 1999 Xinxing Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.4.9	51	Beijing Shunda Chemical Material Corporation	5205828
2	1999.4.28	2.02	Beijing Electric Technology Research Center	07908455
3	1999.5.4	2.5	Beijing Electric Technology Research Center	07908460
4	1999.6.21	45	Beijing Shunda Chemical Material Corporation	5205831
5	1999.6.23	2.5	Beijing Baola Polyurethane Co. Ltd.	02419919
6	1999.8.25	50	Beijing Shunda Chemical Material Corporation	5762087
7	1999.9.9	7	Beijing Baola Polyurethane Co. Ltd.	06469658
8	1999.7.22	4	Beijing Baola Polyurethane Co. Ltd.	02970472
9	1999.7.22	3.44	Beijing Baola Polyurethane Co. Ltd.	02970474
10	1999.10.17	50	Beijing Shunda Chemical Material Corporation	5762096
11	1999.10.21	8.25	Beijing Baola Polyurethane Co. Ltd.	06607016
12	1999.10.21	6.74	Beijing Baola Polyurethane Co. Ltd.	06607015
13	1999.11.11	6	Beijing Baola Polyurethane Co. Ltd.	06738096
14	1999.11.18	7	Beijing Baola Polyurethane Co. Ltd.	06738116
15	1999.11.18	6.72	Beijing Baola Polyurethane Co. Ltd.	06738117
16	1999.11.24	6.25	Beijing Baola Polyurethane Co. Ltd.	06738135
17	1999.12.27	7	Beijing Maohua Insulation Co.	00700808
18	1999.12.27	7	Beijing Maohua Insulation Co.	00700809
	Total	272.42		
	CFC-11	68.11		

Beijing Direct Insulation Pipe Plant

Enterprise Background

36. Beijing Direct Insulation Pipe Plant (Beijing Direct) was established in 1990. It has 96 employees and mainly produces pipe-in-pipe for civil and petroleum industries. It has two foaming machines. The high pressure foam dispenser (output: 220 kg/min) made by Dacheng was installed in 2001. The low pressure foam dispenser (100 kg/min) produced by Tianjin was installed in 1993.

37. Name of the director and his contact information are as follow:

Peilin Yan
Telephone: 86-10-8956-7048
Fax: 86-10-8956-7227
Address: Songzhuang Village, Tongzhou District, Beijing 101119, China

Verification

38. The World Bank mission has taken the following verification steps at Beijing Direct:

- Listened to Mr. Yan's introduction of Xinxing and its production of foam products;
- Checked and copied Beijing Direct's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Beijing Direct Insulation Pipe Plant was established before July 1995;
- Beijing Direct was in normal production of polyurethane foam pipes;
- Beijing Direct has two foaming machines. One installed before July 1995 and the other after;
- Beijing Direct consumed 108.98 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 112.02 tons, 107.94 tons, and 112.36 respectively;
- Production of foam in 2002 and 2003 are 753.38 tons and 817.15 tons.

Table 10. 1999 Beijing Direct Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.1.15	40	Beijing Hongjiang Chemical Trading Co. Ltd.	5762126
2	1999.1.28	1	Beijing Baola Polyurethane Co. Ltd.	08615976
3	1999.2.1	0.6	Beijing Baola Polyurethane Co. Ltd.	08615987
4	1999.2.2	0.8	Beijing Baola Polyurethane Co. Ltd.	08615992
5	1999.3.3	1	Beijing Baola Polyurethane Co. Ltd.	08616021
6	1999.3.9	1.5	Tianjin Plastic Group	00327893
7	1999.3.9	1	Beijing Baola Polyurethane Co. Ltd.	08853084
8	1999.3.22	3	Beijing Baola Polyurethane Co. Ltd.	08853110
9	1999.3.28	45	Beijing Hongjiang Chemical Trading Co. Ltd.	5762131
10	1999.4.2	0.6	Beijing Jingjiu Equipmetn Co.	08652963
11	1999.4.23	2	Dongda Polymer Co. Ltd.	00246534
12	1999.4.26	58	Beijing Hongjiang Chemical Trading Co. Ltd.	5762135
13	1999.5.18	0.4	Beijing Baola Polyurethane Co. Ltd.	01500614
14	1999.5.18	2	Dongda Polymer Co. Ltd.	00247421
15	1999.5.27	2	Tianjin Plastic Group	00454839
16	1999.5.31	2	Dongda Polymer Co. Ltd.	00247933
17	1999.6.9	60	Beijing Hongjiang Chemical Trading Co. Ltd.	5762138
18	1999.6.10	2	Dongda Polymer Co. Ltd.	00247998
19	1999.6.16	2	Tianjin Plastic Group	00454951
20	1999.6.16	1	Tianjin Plastic Group	00454949
21	1999.6.22	2	Dongda Polymer Co. Ltd.	01892606
22	1999.7.8	0.5	Beijing Baola Polyurethane Co. Ltd.	02419959
23	1999.7.13	0.5	Beijing Baola Polyurethane Co. Ltd.	02419974
24	1999.7.16	2	Dongda Polymer Co. Ltd.	00808618

25	1999.7.21	1	Beijing Baola Polyurethane Co. Ltd.	02970468
26	1999.7.27	2	Dongda Polymer Co. Ltd.	00462485
27	1999.8.2	52	Beijing Hongjiang Chemical Trading Co. Ltd.	5762142
28	1999.8.5	2	Dongda Polymer Co. Ltd.	00452521
29	1999.8.9	2	Dongda Polymer Co. Ltd.	00462535
30	1999.8.9	3	Dongda Polymer Co. Ltd.	00462534
31	1999.8.13	1	Beijing Baola Polyurethane Co. Ltd.	02970521
32	1999.8.17	4	Dongda Polymer Co. Ltd.	00462582
33	1999.8.23	2	Dongda Polymer Co. Ltd.	00462600
34	1999.9.3	3	Dongda Polymer Co. Ltd.	00053344
35	1999.9.13	4	Dongda Polymer Co. Ltd.	00053394
36	1999.9.17	2	Beijing Baola Polyurethane Co. Ltd.	06469683
37	1999.9.17	1	Beijing Baola Polyurethane Co. Ltd.	06469684
38	1999.9.25	50	Beijing Hongjiang Chemical Trading Co. Ltd.	5762145
39	1999.9.29	3	Dongda Polymer Co. Ltd.	00053471
40	1999.10.8	3	Dongda Polymer Co. Ltd.	00053500
41	1999.10.11	2	Dongda Polymer Co. Ltd.	00074607
42	1999.10.15	4	Dongda Polymer Co. Ltd.	00074625
43	1999.10.19	2	Dongda Polymer Co. Ltd.	00074547
44	1999.10.22	3	Dongda Polymer Co. Ltd.	00074658
45	1999.10.26	2	Beijing Baola Polyurethane Co. Ltd.	06607028
46	1999.10.29	4	Dongda Polymer Co. Ltd.	00074687
47	1999.11.5	4	Dongda Polymer Co. Ltd.	00024722
48	1999.11.3	45	Beijing Hongjiang Chemical Trading Co. Ltd.	5762148
49	1999.11.19	4	Dongda Polymer Co. Ltd.	00024781
50	Total Preblended Polyol	435.9		
	Total CFC-11	108.98		

Hebei Jiangfeng Pipe Co. Ltd.

Enterprise Background

39. Hebei Jiangfeng Pipe Co. Ltd. (Hebei Jiangfeng) was established in 1994. It has 102 employees and mainly produces pipe-in-pipe for civil and petroleum industries. It has two foaming machines. The high pressure foam dispenser (output: 220 kg/min) made by Hebei was installed in 2004. The low pressure foam dispenser (120 kg/min) produced by Leqing was installed in May 1995.

40. Name of the director and his contact information are as follow:

Yanjiang Zhang
Telephone: 86-317-681-3188
Fax: 86-317-681-1188
Address: Xindian, Cangzhou, Hebei 061400, China

Verification

41. The World Bank mission has taken the following verification steps at Hebei Jiangfeng:

- Listened to Mr. Zhang's introduction of Jiangfeng and its production of foam products;
- Checked and copied Jiangfeng's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Hebei Jiangfeng Insulation Pipe Plant was established before July 1995;
- Hebei Jiangfeng was in normal production of polyurethane foam pipes;
- Hebei Jiangfeng has two foaming machines. One installed before July 1995 and the other after;
- Hebei Jiangfeng consumed 123.85 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 109.24 tons, 120.88 tons, and 118.02 tons respectively;
- Production of foam in 2002 and 2003 are 814.46 tons and 792.46 tons.

Table 11. 1999 Hebei Jiangfeng Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.1.12	2	Tianjin Yuesheng New Material Research Institute	01161068
2	1999.1.19	25	Beijing Yatai Chemical Co. Ltd.	5761951
3	1999.3.20	45	Beijing Shunda Chemical Co. Ltd.	5762080
4	1999.4.18	50	Beijing Yatai Chemical Co. Ltd.	5761954
5	1999.5.12	52	Beijing Yatai Chemical Co. Ltd.	6093547
6	1999.6.1	50	Beijing Yatai Chemical Co. Ltd.	5761958
7	1999.7.1	58	Beijing Yatai Chemical Co. Ltd.	6096114
8	1999.7.29	40	Beijing Yatai Chemical Co. Ltd.	6096115
9	1999.8.17	0.405	Tianjin Yuesheng New Material Research Institute	00934890
10	1999.9.28	50	Beijing Yatai Chemical Co. Ltd.	6096119
11	1999.10.30	48	Beijing Yatai Chemical Co. Ltd.	5761972
12	1999.11.30	40	Beijing Yatai Chemical Co. Ltd.	5761975
13	1999.12.2	3	Tianjin Beichen New Material Plant	00274751
14	1999.12.20	32	Beijing Shunda Chemical Co. Ltd.	5762100
15	Total Preblended Polyol	495.405		
16	Total CFC-11	123.85		

Tianjin Xiatong Refrigeration Equipment Co. Ltd.

Enterprise Background

42. Tianjin Xiatong Refrigeration Equipment Co. Ltd. (Xiatong) was established in 1992. It has 65 employees and mainly produces sandwich panels. Xiatong uses hand mixing in its panel production and does not have any foaming machines.

43. Name of the director and his contact information are as follow:

Zikui Chen
Telephone: 86-22-6058-1102
Fax: 86-22-2691-0200
Address: Tiedong Road, Beichen District, Tianjin 300400, China

Verification

44. The World Bank mission has taken the following verification steps at Hebei Xiatong:

- Listened to Mr. Chen's introduction of Xiatong and its production of foam products;
- Checked and copied Xiatong's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Tianjin Xiatong Refrigeration Equipment Co. Ltd. was established before July 1995;
- Xiatong was in normal production of polyurethane foam panels;
- Xiatong does not have any foaming machines;
- Xiatong consumed 21.63 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 25.72 tons, 69.86 tons, and 36.25 tons respectively;
- Production of foam in 2002 and 2003 are 435.28 tons and 225.86 tons.

Table 12. 1999 Xiatong Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.3.20	26	Beijing Shunda Chemical Co. Ltd.	5205826
2	1999.4.1	1.25	Tianjin Furong Polyurethane Plant	0405163
3	1999.4.19	0.5	Tianjin Furong Polyurethane Plant	0405167
4	1999.5.13	32	Beijing Shunda Chemical Co. Ltd.	5205829
5	1999.8.12	25	Beijing Longhai Petrochemical Corporation	0314777
6	1999.8.23	0.5	Tianjin Furong Polyurethane Plant	00046071
7	1999.9.2	0.75	Tianjin Jinman Polyurethane Plant	01468677
8	1999.9.6	0.5	Tianjin Jinman Polyurethane Plant	01468680
9	Total Preblended Polyol	86.5		
10	Total CFC-11	21.63		

Tianjin Yuesheng New Material Research Institute

Enterprise Background

45. Tianjin Yuesheng New Material Research Institute (Yuesheng) was established in 1991. It has 28 employees and mainly produces pipe-in-pipe, sandwich panel, and spraying foam for cold storage. Yuesheng has two foaming machines. The low pressure foam dispenser (output: 120 kg/min) made by Yanjin was installed in 1994. The low pressure spray foam machine (7 kg/min) produced by Leqing was procured in 1994.

46. Name of the director and his contact information are as follow:

Zhaosheng Song
Telephone: 86-22-2470-3272
Fax: 86-22-8481-6423
Address: Dabizhuang County, Dongli District, Tianjin 300240, China

Verification

47. The World Bank mission has taken the following verification steps at Yuesheng:

- Listened to Mr. Song's introduction of Yuesheng and its production of foam products;
- Checked and copied Yuesheng's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Tianjin Yuesheng New Material Research Institute was established before July 1995;
- Yuesheng was in normal production of polyurethane foam pipes;
- Yuesheng has two foaming machines. Both of them installed before July 1995;
- Yuesheng has both consumption and sale of pre-blended polyol. Sale of pre-blended polyol and CFC-11 are excluded from the consumption figures;
- Yuesheng consumed 49 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 59.59 tons, 62 tons, and 45 tons respectively;
- Production of foam in 2002 and 2003 are 410.15 tons and 297.69 tons.

Table 13. 1999 Yuesheng Procurement Record of Pre-blended Polyol

	Date	Amount	Supplier	Invoice
1	1999.1.12	0.75	Tianjin Dasi Chemical Co. Ltd.	01343046
2	1999.1.20	0.5	Tianjin Nianfeng Tradel Co. Ltd.	00077237
3	1999.1.25	1	Tianjin Huaqiang Polyurethane Co. Ltd.	01671673
4	1999.2.2	0.25	Tianjin Nianfeng Tradel Co. Ltd.	00588178
5	1999.3.12	0.25	Tianjin Nianfeng Tradel Co. Ltd.	00691940
6	1999.3.24	0.5	Tianjin Huaqiang Polyurethane Co. Ltd.	00758986
7	1999.3.27	0.25	Tianjin Dasi Chemical Co. Ltd.	00185881
8	1999.4.19	10	Beijing Yatai Chemical Co. Ltd.	5761955
9	1999.5.17	0.5	Tianjin Huaqiang Polyurethane Co. Ltd.	00433278
10	1999.5.24	1	Tianjin Qunrui Trade Co. Ltd.	00462951
11	1999.6.3	14	Beijing Yatai Chemical Co. Ltd.	5761959
12	1999.6.8	0.5	Tianjin Nianfeng Tradel Co. Ltd.	00476905
13	1999.6.8	0.75	Tianjin Nianfeng Tradel Co. Ltd.	00476906
14	1999.6.18	0.5	Tianjin Huaqiang Polyurethane Co. Ltd.	01042028
15	1999.6.21	0.75	Tianjin Aolunte Chemical Corporation	00756237
16	1999.7.20	18	Beijing Yatai Chemical Co. Ltd.	5761965
17	1999.9.5	12	Beijing Yatai Chemical Co. Ltd.	5761969
18	1999.10.28	0.75	Tianjin Yanxing Material Co. Ltd.	00012985
19	1999.11.1	14.5	Beijing Yatai Chemical Co. Ltd.	5761973
20	1999.11.10	2	Tianjin Huaqiang Polyurethane Co. Ltd.	00921036
21	1999.11.29	1	Tianjin Yanxing Material Co. Ltd.	00960378
22	1999.12.10	0.75	Tianjin Aolunte Chemical Corporation	01167525
23	1999.12.30	1	Tianjin Dasi Chemical Co. Ltd.	01403735

24	合计	81.5*		

*Yuesheng has both consumption and sale of its preblended polyol. Among 81.5 tons, 49 tons was consumption in 1999.

Tianjin Lifeng Development Co. Ltd.

Enterprise Background

48. Tianjin Lifeng Development Co. Ltd. (Lifeng) was established in 1992. It has 68 employees and mainly produces pipe-in-pipe for district heating and petroleum industries. Lifeng has three foaming machines. Two machines were installed in 1993 and one was installed in 1998. Two 1993 machines are low pressure foam dispensers (output:150 kg/min) made by Jinghai. 1998 machine is high pressure foam dispenser (output: 150 kgt/min) made by Leqing.

49. Name of the director and his contact information are as follow:

Baoyuan Zhao
Telephone: 86-22-2632-3358
Fax: 86-22-2632-3398
Address: Zhaoguli, Hebei District, Tianjin 300251, China

Verification

50. The World Bank mission has taken the following verification steps at Lifeng:

- Listened to Mr. Zhao's introduction of Lifeng and its production of foam products;
- Checked and copied Lifeng's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Tianjin Lifeng Development Co. Ltd. was established before July 1995;
- Lifeng was in normal production of polyurethane foam pipes;
- Lifeng has three foaming machines. Two of them were installed before July 1995 and one after;
- Lifeng consumed 110.67 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 124.25 tons, 129.31 tons, and 126.29 tons respectively;
- Production of foam in 2002 and 2003 are 823.62 tons and 805.23 tons.

Table 14. 1999 Lifeng Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.1.19	30	Beijing Shunda Chemical Co. Ltd.	5762077
2	1999.2.3	1	Tianjin Aide Fine Chemical Corporation	00137582
3	1999.4.25	52	Tianjin Jinghai Plastic Plant	0262930
4	1999.5.30	55	Beijing Shunda Chemical Co. Ltd.	5762083
5	1999.6.24	4	Tianjin Aide Fine Chemical Corporation	00663736
6	1999.6.25	55	Beijing Yatai Chemical Co. Ltd.	6096110
7	1999.7.3	1	Tianjin Aide Fine Chemical Corporation	00990260
8	1999.8.12	7.4	Tianjin Aide Fine Chemical Corporation	00663747
9	1999.8.12	6.6	Tianjin Aide Fine Chemical Corporation	00663748
10	1999.8.14	50	Beijing Shunda Chemical Co. Ltd.	5762086
11	1999.9.16	6.5	Tianjin Aide Fine Chemical Corporation	00166804
12	1999.9.16	6	Tianjin Aide Fine Chemical Corporation	00166806
13	1999.9.16	6.5	Tianjin Aide Fine Chemical Corporation	00166803
14	1999.9.16	6.5	Aide Fine Chemical Co.	00166805
15	1999.9.28	40	Beijing Shunda Chemical Co. Ltd.	5762093
16	1999.9.29	4.545	Tianjin Aide Fine Chemical Corporation	00166811
17	1999.9.29	5.455	Tianjin Aide Fine Chemical Corporation	00166812
18	1999.10.8	3.08*	ICI	00721519
19	1999.10.25	40	Beijing Shunda Chemical Co. Ltd.	5762097
20	1999.11.15	8	Tianjin Aide Fine Chemical Corporation	00599814
21	1999.11.15	8	Tianjin Aide Fine Chemical Corporation	00599815
22	1999.11.20	8	Tianjin Xinnuo Chemical Co. Ltd.	00166757
23	1999.11.21	8	Tianjin Xinnuo Chemical Co. Ltd.	00166758
24	1999.11.22	8	Tianjin Xinnuo Chemical Co. Ltd.	00166759

25	1999.11.29	7	Tianjin Xinnuo Chemical Co. Ltd.	00166760
26	1999.11.29	7.72	Tianjin Xinnuo Chemical Co. Ltd.	00166761
27	1999.12.14	0.459	Tianjin Aide Fine Chemical Corporation	00940570
28	1999.12.25	5	Tianjin Tongda Polyurethan Plant	01239113
29	1999.12.25	5	Tianjin Tongda Polyurethan Plant	01239114
	Total Preblended Polyol	445.759		
	Total CFC-11	110.67		

*The mission has found that 3.08 tons of preblended polyol procured from ICI was non-CFC. So 0.77 tons was deducted from total of 111.44 tons.

Chengde Hongxing Refrigeration Equipment Co. Ltd.

Enterprise Background

51. Chengde Hongxing Refrigeration Equipment Co. Ltd. (Hongxing) was established in 1985. It has 120 employees and mainly produces sandwich panels and spray foam for cold storage. It has two foaming machines. The high pressure foam dispenser (output: 150 kg/min) made by Zhongyi was installed in 1998. The low pressure spray foam machine (9 kg/min) produced by Nangong was procured in 1994.

52. Name of the director and his contact information are as follow:

Jingzhu Han
Telephone: 86-314-610-5004
Fax: 86-314-610-5004
Address: Hongshanzui County, Pingquan, Hebei 067500, China

Verification

53. The World Bank mission has taken the following verification steps at Hongxing:

- Listened to Mr. Han's introduction of Hongxing and its production of foam products;
- Checked and copied Hongxing's Industrial and Commercial Registration (License);
- Visited production line and took photos;
- Visited inventory of raw materials and final products;
- Checked financial records and copied CFC-11 receipts year 1999, 2001, 2002, and 2003;

Conclusion

- Chengde Hongxing Refrigeration Equipment Co. Ltd. was established before July 1995;
- Hongxing was in normal production of polyurethane foam pipes;
- Hongxing has two foaming machines. One installed before July 1995 and the other after;
- Hongxing consumed 116.75 tons of CFC-11 in 1999;
- Consumption of CFC-11 in 2001, 2002, and 2003 are 124.24 tons, 125.07 tons, and 101.06 tons respectively;
- Production of foam in 2002 and 2003 are 813.08 tons and 623.54 tons.

Table 15. 1999 Hongxing Procurement Record of Pre-blended Polyol

	Date	Amount (ton)	Supplier	Invoice Number
1	1999.1.7	30	Beijing Shunda Chemical Co. Ltd.	5762076
2	1999.3.5	45	Beijing Shunda Chemical Co. Ltd.	5762078
3	1999.4.30	58	Beijing Shunda Chemical Co. Ltd.	5762082
4	1999.5.28	56	Beijing Yatai Chemical Co. Ltd.	5761957
5	1999.6.25	52	Beijing Yatai Chemical Co. Ltd.	5761962
6	1999.7.30	60	Beijing Yatai Chemical Co. Ltd.	5761966
7	1999.8.10	60	Beijing Shunda Chemical Co. Ltd.	5762085
8	1999.9.30	55	Beijing Shunda Chemical Co. Ltd.	5762094
9	1999.11.2	50	Beijing Shunda Chemical Co. Ltd.	5762098
10	1999.11.9	1	Dongda Polymer Corporation	0148832
11	Total Preblended Polyol	467		
12	Total CFC-11	116.75		

CFC-11 PHASEOUT IN THE POLYURETHANE CHINA FOAM SECTOR

2005 ANNUAL PROGRAM

MP PROJECT MANAGEMENT OFFICE
STATE ENVIRONMENTAL PROTECTION AGENCY, CHINA

AND

THE WORLD BANK

September 30, 2004

Data Sheet

Country	People's Republic of China
Project title:	Sector Plan for phasing out the use of CFC in the PU Foam Sector
Year of plan	2005
# of years completed	3
# of years remaining under the plan	4
Ceiling for 2004 national CFC consumption (in ODP tons), 2003 Annual Plan	13,100 ODP tonnes
Ceiling for 2005 national CFC consumption (in ODP tons), 2004 Annual Plan	10,400 ODP tonnes
Ceiling for 2004 CFC consumption in the PU foam sector	11,666 ODP tones
Ceiling for 2005 CFC consumption in the PU sector	9,646 ODP tones
Total funding approved in principle for the foam sector plan	US$53.846 million
Total funding released as of Oct. 2004	US$33.413 million
Level of funding requested for 2005 Annual Plan	US$10.903 million

National Implementing operating agency	State Environmental Protection Administration
International implementing agency	The World Bank

TABLE OF CONTENTS

Introduction

1. In accordance with the Executive Committee's approval of the "Agreement for the China CFC 11 PU Foam Sector" (UNEP/Ozl.Pro/ExCom/35/19, Decision and Annex), China is hereby requesting release of the **fourth tranche of US$10.903 million** for the implementation of the 2005 annual program. With this funding, China's CFC-11 consumption in the PU foam sector will be limited to a **maximum of 9,646 ODP MT** by the end of 2005. Details of the 2005 annual program are provided in Section B.

2. ***China's CFC-11 phaseout obligations in the PU foam sector.*** Within the sector plan, China agreed to the following control targets for CFC-11 consumption in the PU foam sector.

Table 1. Control Targets for CFC-11 Consumption in the PU Foam Sector and Annual Grant

	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Annual National CFC 11 consumption limit	17,200	15,500	13,100	10,400	7,700	4,130	3,800	300	0	
Annual CFC-11 consumption in PU foam sector	14,143	13,830	11,666	9,646	7,164	3,821	3,553	102	0	
Annual CFC-11 phaseout targets in PU foam sector	2,000	2,500	2,500	2,500	600	551				10,651
Total annual funding (US$ 1,000)	9,940	12,570	10,903	10,903	3,320	2,676	1,767	1,767		53,846

Statistics of China's Annual CFC-11 Consumption in 2003

3. China's annual national CFC-11 consumption and the CFC-11 consumption in PU foam sector in the year of 2003. China's national CFC-11 consumption in 2003 was 13,994.34 tonnes, CFC-11 consumption in PU foam sector was 11,423.48 tonnes. Both were controlled within the consumption limits set forth in the Agreement for the China CFC 11 PU Foam Sector.

Part A

IMPLEMENTATION STATUS OF THE 2002-2004 ANNUAL PROGRAMS

Policy and Government Actions

4. In order to put production, trade, import & export, and consumption of ODS under control, the government made greater efforts to push the effective enforcement of existing regulations and laws and take further measures to step up the campaign against the illegal production, trade, and consumption of ODS. These actions greatly support the smooth implementation of the sector plan and laid a solid foundation for the success of overall CFC-11 phaseout in China.

a. ***Raising public awareness of the related existing policies.*** The government is always raising the public awareness of the related regulations and laws in place on ODS phaseout by various ways including training programs and sino-PU website. The sino-PU website has been operating favorably since its establishment and received more than 41,000 visits.

b. ***Production control of CFC-11.*** The regulation on Tradable Production Quota has been under implementation since 1999. Production of CFC-11 was under control as previous years.

a. ***Export and import control of ODS***. The Management Regulation on Export/Import Control of ODS, promulgated in December 1999 by SEPA in collaboration with Ministry of Foreign Trade and Economic Cooperation (MOFTEC) and General Administration of Customs (GAC), covers all ODS as well as related equipment and facilities that produce or consume ODS. ODS Export/Import quota and permit systems have been adopted, and all enterprises wishing to export or import ODS must hold both a quota issued by SEPA and MOFTEC, as well as specific export/import permits. GAC supervises exports and imports of ODS. China has also promulgated the Export/Import Control List of ODS in China, the First Group in January, 2000, the Second Group in January 2001, and the third group in January 2004. Under this regulation, China has banned imports of CTC , import and export of CFC-113 used as solvent and introduced quota and permit requirements exports and imports of CFC-11, CFC-12, CFC-113 (not used as solvent), CFC-114, CFC-115, CFC-13 and TCA.

c. ***Consumption control of CFC-11 in other sectors.*** Together with the PU foam sector plan, the tobacco sector plan, the domestic refrigeration sector plan, and the industrial and commercial refrigeration sector plan, are also under implementation. Thus, CFC-11 consumption for these three sectors was under control on an annual basis under each sector plan, which enables the foam sector to limit its national CFC-11 consumption limit to the agreed targets.

d. Substitute development. The government attaches great importance to the substitute to CFC-11 for foam production and encourages research and development activities carried out by enterprises and research institutes. Seminars and workshops were held and participated by experts and specialists to exchange information on substitute technologies, including possible solutions to solve problems occurred in foam production using HCFC 141b, and possible application of new technologies with HFC 245fa.

e. ***Capacity Building.*** Government held several workshops and training sessions to improve knowledge and capabilities of CFC-11 foam enterprises on the use of substitute and understanding of substitute technologies. SEPA staffs were also provided training on project management.

Enterprise Phaseout Activities

5. As of June 2004, nine conversion contracts have been signed, accounting for a total of 6,461.98 ODP tons of CFC-11 to be phased out. (See Annex 1 table 1.1)

6. The 2002 annual program comprised three restructuring projects: Xinxiang Xinyuan, Chengdu Jinjiang, and Zhejiang Chunhui. The Chengdu Project will phase out 552 MT of CFC-11 in seven enterprises, the Xinxiang Project will phase out 636 MT of CFC-11 in eight enterprises, and the Chunhui Project will phase out 1164.98 MT of CFC-11 in 31 enterprises. Under these three projects, a total of 2,353 MT of CFC-11 consumption will be phased out by the end of 2005 (eliminating the use of CFC-11 at 46 enterprises). Some CFC-11 foam production lines and equipment have so far been disposed. The CFC-11 consumption of these three projects is going down. More details of implementation status are summarized in Annex 1 table 1.1 and 1.2.

7. Under the 2003 Annual Program, three restructuring project contracts were signed including Lanzhou Huayu, Shaoxing Weike, and Nantong Xinyuan. The Lanzhou Project will phase out 1,075.44 MT of CFC-11 in 19 enterprises, the Shaoxing Project will phase out 997.75 MT of CFC-11 in five enterprises, and the Nantong Project will phase out 648.11 MT of CFC-11 in 11 enterprises. Under these three projects, a total of 2,721 MT of CFC-11 consumption will be eliminated by the end of 2006 (eliminating the use of CFC-1 at 35 enterprises). Some CFC-11 foam production lines and equipment have so far been disposed. The CFC-11 consumption of these three projects is going down. More details of implementation status are summarized in Annex 1 table 1.1 and 1.2.

8. Under the 2004 Annual Program, six restructuring project contracts are covered: Dalian Yuji, Fenghua Yongxing, Beijing Zhonghai, Hejian Hongda, Ningbo Lantian, and Shanghai Jinyuanyuhua. Three conversion contracts for Dalian Yuji, Fenghua Yongxing, Beijing Zhonghai were signed in March and May 2004. The Dalian Project will phaseout 303.9 MT of CFC-11 in seven enterprises, the Fenghua Project will phaseout 484 MT of CFC-11 in nine enterprises, and the Beijing Project will phaseout 599.8 MT of CFC-11 in eight enterprises. The feasibility studies for the other three projects, Hejian, Ningbo, and Shanghai were approved and their conversion contracts will be signed in September and November 2004. The Hejian Project will phaseout 399.7 MT of CFC-11 in 25 enterprises; the Ningbo Project will phaseout 226.11 MT of CFC-11 in five enterprises; and the Shanghai project will phaseout 1,400 MT of CFC-11 in 26 enterprises. A total of 3,413.51 MT of CFC-11 consumption for the six projects will be phased out by the end of 2006 (eliminating the use of CFC-11 at 80 enterprises). More details of implementation status are summarized in Annex 1 table 1.1 and 1.2.

9. As indicated above, the implementation of 2002 annual program was audited by the China National Audit Office in 2003; the implementation of 2003 annual program was audited by the China National Audit Office in 2004.

10. **World Bank Verification of CFC-11 Consumption in Signed Reduction Contracts (Annex 2).**

a. In August 2002, the Bank verified and confirmed that CFC –11 consumption in Chengdu project which consumed a total of 552 MT. This is one of the three contracts in the 2002 annual program. This project constitutes about 22% of the 2,500MT targets, and 33% of the contracts (3) signed.
b. In August 2003, the Bank verified and confirmed that CFC-11 consumption in the Nantong project which consumed a total of 649.1 MT. This is one of the three contracts in the 2003 annual program. This project constitutes about 26% of the 2,500MT targets, and 33% of the contracts (3) signed.
c. In June 2004, the Bank has verified and confirmed that CFC-11 consumption in Beijing and Dalian projects which consumed a total of 900.29 MT. These are two of the five contracts in the 2004 annual program. These projects constitute about 36% of the 3,413.51MT targets, and 16% of the contracts (6) signed.

Technical Assistance Activities

11. TA activities envisaged under the Sector Plan concentrate on strengthening: (a) the overall institutional framework for phaseout; (b) substitute chemical development; (c) management, monitoring & evaluation capabilities of participating institutions; (d) skills of enterprise managers involved in CFC-11 consumption phaseout activities; and (e) information exchange. These are all essential to the success of the phaseout.

12. Twenty-one technical assistance activities have so far been planned under 2002-2004 annual programs, among them, 9 is under 2002 Annual Program and 6 under each of 2003 and 2004 Annual Programs. The project of *Manual on substitute technology in the PU foam Sector* under 2003 Annual Program was cancelled and the project of *Preparation of Feasibility Study Reports* was proposed by SEPA, approved by the World Bank and put in 2003 Annual Program. The total project number remains unchanged. Among these, twelve (12) have been completed and nine (9) are under implementation (Annex 3). All terms of reference and detailed work programs will be agreed with the World Bank before implementation. Most of these activities are expected to be completed within two years. The general status of the 2002-2004 technical assistance activities are summarized in the annex 3. The status of the 2004 technical assistance activities with details is summarized as follows:

a. ***F-04-TA1-Training of personnel in implementation of phaseout activities.*** The Terms of Reference for this project was by the World Bank in June 2004. Three workshops will be organized under this project for staff in the foam team in the ozone unit, local experts, prospective beneficiaries in the 2004 and 2005 annual programs, the DIA, procurement agency, general contractors, and enterprises under the 2002 and 2003 annual programs. The training includes (1) international agreements and conventions on ozone layer protection, (2) foam sector plan, (3) project implementation manual, (4) CFC-11 consumption verification, (5) preparation of feasibility study report, (6) procurement procedure and requirement, (7) project financial management and audit, (8) progress report preparation, and (9) CFC-11-based equipment disposal requirement and procedure. It is

planned that one training workshop will be conducted by the end of 2004, the other two will be held in 2005.

b. ***F-04-TA2-PU foam products standard formulation and revision (Phase II).*** According to the study results of the TA project in 2002, 33 technical standards were identified for revision and formulation. Six relevant standards were arranged under the 2003 annual program. Another seven standards will be revised and formulated under the 2004 annual program. The formulation and revision of foam products standards will last until 2007. The Terms of Reference for the 2004 TA was cleared by the Bank in June 2004 and the potential implementing institute is under selection.

c. ***F-04-TA3-The 2003 performance audit.*** A Performance audit is required under the foam sector plan to be carried out by the China National Audit Office (CNAO). The 2003 performance audit was undertaken in June 2004 and the final audit report was submitted to the Bank in August 2004.

d. ***F-04-TA4-A Research on the application of HFC-245fa technology.*** Substitute technology is one of the most important elements for the implementation of the Foam Sector Plan. As a substitute to CFC-11 with zero ODP, HFC-245fa application has been commercially applied in developed countries, especially in United States and European countries. Besides, one of raw materials of HFC-245fa production is CTC. If the application of HFC-245fa is successful in China, it could have a contribution to CTC production phaseout in China. This proposed TA would conduct a research on the application of HFC-245fa to foam production, which could include (i) initial study and screening of formulation basing on the local available PU foam raw materials, (ii) performance comparison of foam products produced with different PU systems of HFC-245fa, HCFC-141b, and CFC-11, and (iii) comparison on economic and technical factors of the above three systems to provide basis for the application of HFC-245fa technology in China. The Terms of Reference was cleared by the Bank in June 2004 and the potential implementing institute is under selection. The bidders have sent their bidding documents to SEPA for evaluation.

e. ***F-04-TA5- Study tours.*** Two study tours are necessary to know about the application of the HFC-245fa technology in foreign countries where the technology is working well. The study teams will go to Europe and the Untied States to (i) visit foam producers using HFC-245fa technology, (ii) visit chemical companies to get information on raw materials and formulation for foam production using HFC-245fa, and (iii) visit related research institutes to learn the status and trend of HFC-245fa technology development. The Terms of Reference for the project was cleared by the Bank in June 2004 and the two study tours will be in late 2004 or early 2005.

f. ***F-04-TA6- Consultant services.*** Three groups of local consultants have been recruited under previous annual programs to provide technical assistances for enterprises. Consultant services have been proved to be very useful to the implementation of the foam sector plan. The Terms of Reference for this TA was cleared by the Bank in June 2004. 14 individual consultants in different groups have signed contracts with SEPA.

PART B

2005 ANNUAL PROGRAM

Phaseout Targets

13. By the end of 2005, national CFC-11 consumption target will be limited to 10,400 MT through the control of CFC-11 production in the CFC production sector being implemented, and the control of net CFC-11 import. At the same time, CFC-11 consumption in the PU foam sector will not exceed 9,646 MT through the completion of individual investment projects that were approved by ExCom and funded by the MLF in the past five to six years. For 2005, the CFC-11 phaseout targets in PU foam sector is 2,500 MT, which will be phased out by the end of 2007. All contracts for these 2,500 MT of CFC-11 will be signed in 2005. It is envisaged that the US$10,903 million will be allocated to PU foam enterprises to convert from CFC-11 foam production to non-CFC foam production and for technical assistance activities.

Program Activities in 2005

14. ***Policy and government actions***. In 2005, the following government actions will continue to support program activities and are considered necessary for the success of total CFC-11 phaseout in the PU foam sector in China.

a. ***Ban on new construction of CFC-11 foam production.*** The Notice has been effective since 1997 and remains effective. Continued public awareness activities on the sector phaseout plan helped effective implementation of this Notice.

b. ***Production control of CFC-11.*** The regulation on Tradable Production Quota has been under implementation since 1999 and will continue. Production of CFC-11 will be under control as previous years.

c. ***Export and import control of ODS.*** All policies on ODS import and export described in Para. 4/c under Part A will continue effective.

d. ***Consumption control of CFC-11 in other sectors.*** All other sector plans will continue implementation of CFC phaseout according to the agreement.

e. Substitute development. Government will continue its support to the development of substitutes and research for non-CFC chemicals for foam production.

f. Institutional strengthening. Government will continue its efforts to improve knowledge and capabilities of project management personnel and various parties which involved in the phaseout program including foam enterprises in terms of related policies and understanding of new substitute technologies.

15. **Enterprise activities**. SEPA will identify PU foam enterprises with total CFC-11 consumption amounting to at least 2,500 MT under 2005 AP according to agreement. A minimum of 50% of the reduction contracts are expected to be signed by the mid-2005, and another 50% to be signed not later than by the end of 2005. Based on the current preparation status, SEPA expects five to six large regional projects to be included in the 2005 annual program. The enterprise activities will be changed depending on the CFC accelerated phaseout plan.

16. **Technical assistance activities.** The following activities are proposed for 2005:

a. ***F-05-TA1-Training of personnel in implementation of phaseout activities.*** Training for concerned stakeholders has been proved to be very important for the implementation of the foam sector phaseout plan according to the past few year's experience. Due to staff change and new enterprises involved, training in 2005 will continue to be provided to: (i) CFC-11 foam producers; (ii) local environment protection agencies and sector bureaus, (iii) audit agencies, and (iv) local experts. Training will help them to understand all policies related to CFC-11 consumption phaseout, and the sector plan implementation mechanism. This type of training will need to be repeated every year in the first few years of implementation. Three workshops are planned under this TA.

b. ***F-05-TA2-PU foam products standard formulation and revision (Phase III).*** According to the study results of the TA project in 2002, 33 technical standards were identified for revision or formulation. It was planned that six relevant standards would be revised or formulated each year since 2003. The formulation and revision of foam products standards will last until 2007. It is planned that five to six standards will be revised and formulated in 2005. In order to bring the standards established/revised under this TA project in line with international practice, two study tours will be organized to go to Europe, United States and Japan to exchange views and experiences with counterparts. These counterparts include (1) related associations which are responsible for formulation of foam product standards, (2) foam producers with these standards, and (3) research institutes for foam production techniques , raw materials of foam production, and applications of technical standards for foam production. Participants of the tours will include representatives from the institute which will implement this TA, project management staff from SEPA and DIA, and typical enterprise representatives, as well as technical experts for foam production.

c. ***F-05-TA3-The 2004 performance audit.*** Since the yearly performance audit is a requirement of implementing the Sector Plan, it will continue to be done in 2005. The audit of 2004 AP will be carried out in the second quarter of 2005 and completed by the end of June 2005.

d. ***F-05-TA4- International Forum on CFC Accelerated Phaseout Plan for PU Foam Sector in China.*** An international forum on CFC accelerated phaseout plan (APP) in the foam sector will be held after it gets approval. Based on the CFC APP, CFCs in the foam sector will be totally phased out by the end of 2007, two years ahead of the current foam agreement. The purpose of the international forum is to give all related stakeholders an opportunity to discuss how to successfully implement the CFC APP in the foam sector. About 600 participants will be invited from related governmental agencies, international implementing agencies of MP projects, project enterprises and other foam enterprises, related industrial associations, universities and research institutes, individual experts.

e. ***F-05-TA5- Consultant services.*** Consultant services will be continued to help the Sector Plan implementation in 2005.

17. The above policy and government actions, enterprise-level activities and technical assistance activities are summarized in Table 2 below.

Table 2: 2005 Annual Program

(Amount in US$ Million)

Please revise the "policy measures" part

CFC 11 control targets			
Control targets in 2005	**CFC 11 in MT ODP**	**Performance Indicators**	**Key Dates**
National CFC 11 consumption limit	10,400	g. Government confirms that the two CFC-11 consumption targets for 2004 are met.	j. June 2005
CFC 11 consumption limit in PU sector	9,646	h. ODS reduction contracts amounting to at least 1,250 MT of CFC11 in the 2005 annual program to be signed before mid-2005.	k. June 2005
CFC 11 phaseout targets in PU foam sector	2,500	i. Implementation of TA activities to help phaseout.	3. Throughout the year

Policy Measures			
Measures	**Funding**	**Performance Indicators**	**Key Dates**
Ban on new construction of CFC-11 foam production	n.a.	1. training workshops to be held for local government officers and all stakeholders	Throughout the year
Production control of CFC-11	n.a.	1. Establish 2005 annual CFC-11 production quota 2. Issue annual production quota to CFC-11 producers for 2005	1. Nov. 2004 2. April 2005
Import/Export control of ODSs	n.a.	1. Implement the import/export license system	Throughout the year
Consumption control of CFC-11in other sectors	n.a.	1. Other CFC-11 consuming sectors will continue implementation as per their sector plans	Throughout the year
Substitute development	n.a.	1. Development and application of new substitute technologies in CFC phaseout will be encouraged and supported.	Throughout the year
Institutional strengthening	n.a.	1. Training workshops and PU website will be used as means to meet the target	Throughout the year

Enterprise activities			
Activities	**Funding (US$ million)**	**Performance Indicators**	**Key Dates**
Conversion of CFC-11 consuming enterprises in PU foam enterprises	Not determined yet	1. Training workshops to be held to invite participation of prospective enterprises for 2005 annual program 2. Project proposals prepared and evaluated 3. To determine grant funds after project evaluation 4. Selection of enterprises to be included in the annual program 5. 50% of the 2005 AP Reduction contracts signed 6. Implementation of signed projects	1. Throughout the year 2. Throughout the year 3. Throughout the year 4. Throughout the year 5. Throughout the year 6. Throughout the year

Table 2: 2005 Annual Program (cont.')

(Amount in US$ million)

Technical Assistance Activities				
TA#	**Activities**	**Funding[1/] (US$ Million)**	**Performance Indicators**	**Key Dates**
F-05-TA1	Training of Personnel Involved in Implementation of Phaseout Activities	0.05	1. TOR to be agreed with the Bank 2. Conduct all workshops	1. 1Q 2005 2. Throughout 2005 and 2006
F-05-TA2	Standard Formulation and Revision (Phase III)	0.10	1. TOR to be agreed with the Bank 2. Start process in recruiting a consulting firm 3. Study tours 4. Formulation and revision of standards 5. Submit final report	1. 1Q-2Q2005 2. 3Q2005 3. 4Q2005 4. 4Q2005 - 2Q2006 5. 3Q2006
F-05-TA3	The 2003 Performance Audit	0.07	1. TOR to be agreed with the Bank 2. Training of auditors 3. Audit 4. Submit audit report before June 30, 2005	1. 1Q 2005 2. 1Q 2005 3. 2Q 2005 4. June 30, 2005
F-05-TA4	International Forum on ODS Accelerated Phaseout Plan for PU Foam Sector in China (about 600 people)	0.136	1. TOR to be agreed with the Bank 2. Advertise by website and newpapers 3. Invite dissertation 4. Hold the forum	1. 1Q 2005 2. 1Q 2005 3. 1Q 2005 4. Sept. 2005
F-05-TA5	Consultant Services	0.06	1. TOR to be agreed with the Bank 2. Recruitment of consultants to Provide consulting services in 2005	1. 1Q 2005 2. Throughout 2005
Total		**0.416**		
Total for phaseout activities		**10.903**		

[1/] These are estimated costs. After bidding for TA contractors and consultants, these costs will be adjusted to reflect contractual amounts for each TA. All TA activities are expected to be completed on schedule.

Annex 1

Implementation Status of Enterprise Activities under 2002 - 2004 Annual Programs

Table 1.1: Basic Information on Conversion Projects as of June 30, 2004

Project Name	CFC-11 Consumption (tons)	Contract Number	Grant Amount (1,000 USD)	Annual Program	Date of Contract Signing
1. Xinxiang Huojia	636	Con-F-02-Iv-01	2,441.6	2002	Sept.2, 2002
2. Chengdu Jinjiang	552	Con-F-02-Iv-02	2,166.3	2002	Aug.20, 2002
3. Zhejiang Chunhui	1164.98	Con-F-02-Iv-03	5,125.9	2002	Dec.27, 2002
4. Lanzhou Huayu	1075.44	Con-F-03-Iv-01	4,664.3	2003	Jan.9, 2003
5. Shaoxingshi Weike	997.75	Con-F-03-Iv-02	4,264.22	2003	Jan.9, 2003
6. Nantong Xinyuan	648.11	Con-F-03-Iv-03	2,510.93	2003	Jan.9, 2003
7. Dalian Yuji	303.9	F/III/S/04/093	1,295	2004	March 19, 2004
8. Fenghua Yongxing	484	F/III/S/04/094	1,800	2004	April 5, 2004
9. Beijing Zhonghai	599.8	F/III/S/04/095	2,595.6	2004	April 9, 2004
10. Hejian Hongda	399.7	Not signed yet		2004	
11. Ningbo Lantian	226.11	Not signed yet		2004	
12. Shanghai Jinyuanyuhua	1400	Not signed yet		2004	
Total	8487.79				

Table 1.2: Implementing Status of Conversion Projects under 2002 - 2004 Annual Programs

Project Name	CFC Equipment Disposal	CFC Consumption in 2003	New Equipment Procurement	Civil works of Projects	Estimated Physical Completion Date
1. Xinxiang Xinyuan	Total: 8 lines Disposal Completed	0	Will arrive in Oct., 2004	Under construction	March 2005
2. Chengdu Jinjiang	Total: 7 lines 4 foam production lines using CFC-11 disposed	356	Will arrive in Oct., 2004	Under construction	March 2005
3. Zhejiang Chunhui	Total: 101 units 41 units disposed	45.59	Will arrive in Oct., 2004	Under construction	June 2005
4. Lanzhou Huayu	Total: 34 units 19 units disposed	979.007	Will arrive in Oct., 2004	Under construction	June 2005
5. Shaoxingshi Weike	Total: 65 units Disposal Completed	273.52	Will arrive in Oct., 2004	Under construction	June 2005

Project Name	CFC Equipment Disposal	CFC Consumption in 2003	New Equipment Procurement	Civil works of Projects	Estimated Physical Completion Date
6. Nantong Xinyuan	Total: 11 lines 6 lines disposed	116.5	Will arrive in Oct., 2004	Under construction	June 2005
7. Beijing Zhonghai	Total: 13 units 0 disposed	601.41	Not start yet	Not start yet	December 2006
8. Dalian Yuji	Total: 20 units 0 disposed	219.58	Not start yet	In bidding	June 2006
9. Fenghua Yongxing	Total: 9 lines 0 disposed	469.86	Not start yet	In bidding	June 2006
10. Hejian Hongda	Total: 49 units 0 disposed	494.19	Not start yet	Not start yet	December 2006
11. Ningbo Lantian	Total: 12 units 0 disposed	264	Not start yet	Not start yet	December 2006
12. Shanghai Jinyuanyuhua	Total: 217 units 0 disposed	1747.85	Not start yet	Not start yet	December 2006

Annex 2: World Bank Verification of CFC-11 Consumption in Signed Reduction Contracts

Table 2.1: World Bank Verification of Eligibility and CFC-11 Phaseout Amounts in August 2002 for 2002 Annual Program

Name of Enterprises	Date of Establishment	CFC-11 Consumption				Verified
		1997	1998	1999	1997-99	
Chengdu Industrial Restructuring PU Flexible foam project – The Chengdu JinJiang Foam General						
1. Duocai Co. Ltd.	1993	67	74	88	76.33	Verified
2. Huiyu Co. Ltd.	1994	76	86	95	85.67	Verified
3. Hongyang Foam Plant	1994	68	75	84	75.67	Verified
4. Liuli Foam Plant	1991	70	75	96	80.33	Verified
5. Qianjin Foam Plant	1992	69	81	87	79.00	Verified
6. Dongzikou Foam Plant	1989	78	71	89	79.33	Verified
7. Chongqing Jinjiang Foam Plant	1994	57	71	99	75.67	Verified
Total		**485**	**533**	**638**	**552**	

Table 2.2: World Bank Verification of Eligibility and CFC-11 Phaseout Amounts in August 2003 for 2003 Annual Program

Name of Enterprises	Date of Establishment	CFC-11 Consumption				Verified
		1999	2000	2001	99-01	
Nantong Xinyuan Industrial Restructuring PU Flexible foam project						
1. Tongzhou Xianfeng Xinan Polyurethane Foam Plant	1991	67.5	44	31	47.5	Verified
2. Tongzhou Xianfeng Polyurethane Foam Co. Ltd.	1993	91.5	80	72.5	81.33	Verified
3. Nantong Haoli Laminating Textile Plant	1992	55.5	54.5	45	51.67	Verified
4. Tongzhou Nanxing Polyurethane Foam Plant	1992	65.5	45	39.5	50	Verified
5. Rugao Jinru Polyurethane Foam Co. Ltd.	1994	79.5	88.5	80	82.67	Verified
6. Rugao Jixing Polyurethane Foam Co. Ltd.	1993	94	81.5	72.3	82.6	Verified
7. Xuzhou Tongshan Polyurethane Foam Plant	1990	89	79	66	78	Verified
8. Fengxian Pengya Polyurethane Foam Plant	1995	53	40	32	41.67	Verified
9. Pizhou Kesheng Polyurethane Foam Co. Ltd.	1993	50	43.3	34	42.43	Verified

Name of Enterprises	Date of Establishment	CFC-11 Consumption				Verified
		1999	2000	2001	99-01	
10. Dafeng Zhongyi Laminating Foam Plant	1986	67.7	46.1	19.8	44.53	Verified
11. Jiangyan Harbor Plastic Foam Plant	1991	65.3	42.5	32.3	46.7	Verified
Total		**778.55**	**644.4**	**524.4**	**649.1**	

Table 2.3: World Bank Verification of Eligibility and CFC-11 Phaseout Amounts in June 2004 for 2004 Annual Program

Name of Enterprises	Date of Establishment	CFC-11 Consumption				Verified
		2001	2002	2003	Baseline (1999)	
Dalian Yuji project						
1. Dalian Zhongshan Insulation Pipe Plant	1993	50.3	46.7	32	40.5	Verified
2. Dalian Zhongda Refrigeration Equipment Co. Ltd.	May 1995	47.75	33.52	41.81	37.85	Verified
3. Dalian Xingsheng Insulation Material Plant16.63	June 1995	20.68	23.58	8.02	16.63	Verified
4. Lushun Insulation Material Plant	1992	15.05	7.5	14	15	Verified
5. Dalian Binshan Group Co. Ltd.	1994	87.75	88	18.25	77.15	Verified
6. DEDZ Polyurethane Foam Corporation	1993	24	32.5	31.25	22.17	Verified
7. Dalian Fishing Engine Industry Corporation	1979	109.71	107.47	73	92	Verified
Beijing Zhonghai						
1. Beijing Zhonghai Runda Co. Ltd.	1997	0	0	0	0	Verified
2. Beijing Xinxing Tiandi Insulation Material Co. Ltd.	1990	85.13	86	72.14	68.11	Verified
3. Beijing Direct Insulation Pipe Plant	1990	112.02	107.94	112.36	108.98	Verified
4. Hebei Jiangfeng Pipe Co. Ltd.	1994	109.24	120.88	118.02	123.85	Verified
5. Tianjin Xiatong Refrigeration Equipment Co. Ltd.	1992	25.72	69.86	36.25	21.63	Verified
6. Tianjin Yuesheng New Material Research Institute	1991	59.59	62	45	49	Verified
7. Tianjin Lifeng Development Co. Ltd.	1992	124.25	129.31	126.29	110.67	Verified
8. Chengde Hongxing Refrigeration Equipment Co. Ltd.	1985	124.24	125.07	101.06	116.75	Verified

Name of Enterprises	Date of Establishment	CFC-11 Consumption				Verified
		2001	2002	2003	Baseline (1999)	
Total					900.29	

Annex 3 Technical Assistance Activities, 2002-2004

Table 3.1: Implementation of Technical Assistance Activities in the 2002 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Planed Completion Date	Implementation status/remarks
F-02-TA1	MIS Equipment	FECO	2003-4-15	2003-4-16	Completed
F-02-TA2	Study Tours	FECO/DIA	n.a.	3Q 2002	Completed
F-02-TA3	PU website establishment	FECO/DIA	n.a.	2003-6-30	Completed
F-02-TA4	Consultant Service	Individual consultants		2003-12-31	Completed
F-02-TA5	Standard Revision Preparation	IPPA[1]	2002-9-1	2003-2	Completed
F-02-TA6	IOC Management Research	Beijing University	2002-9-1	2003-3-15	Completed
F-02-TA7	Training	FECO/DIA	n.a.	2003-12	Completed
F-02-TA8	PU International Forum	FECO/DIA	2002-11	2003-5-1	Completed
F-02-TA9	CO_2 and H_2O technology Survey	JRICI[2]	2002-9-13	2003-3-30	Completed

1. Institute of Plastics Processing & Application of Light Industry
2. Jiangsu Research Institute of Chemical Industy

Table 3.2: Implementation of Technical Assistance Activities in the 2003 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Planed Completion Date	Implementation status/remarks
F-03-TA1	Training	FECO/DIA	n.a.	2004-12-31	Under Implementation
F-03-TA2	Standard Revision	IPPA	2004-3	2005-9-30	Completed
F-03-TA3	2002 Performance Audit	CNAO	2003-7	2004-6-30	Completed
F-03-TA4	PU website management	FECO/DIA	n.a.	2005-10-31	Under Implementation
F-03-TA5	Preparation of Feasibility Study Reports for the Potential Investment Projects	Qualified Institute		2004-12-31	Under Implementation
F-03-TA6	Consultant Service	Individual consultants		2004-12-31	Under Implementation

Table 3.3: Implementation of Technical Assistance Activities in the 2004 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Planed Completion Date	Implementation status/remarks
F-04-TA1	Training	FECO/DIA	n.a.	2005-12-31	TOR cleared
F-04-TA2	Standard Revision	To be selected through bidding		2005-1-31	TOR cleared
F-04-TA3	2003 Performance Audit	CNAO		2004-6-30	Completed
F-04-TA4	A Research on the application of HFC-245fa technology	To be selected through bidding		2004-12-31	TOR cleared
F-04-TA5	Study tour	FECO/DIA	n.a.	2005-6-30	TOR cleared
F-04-TA6	Consultant Service	Individual consultants		2005-12-31	TOR cleared

Annex 4: Enterprise list of Conversion Projects under 2002 - 2004Annual Programs

Table 4.1: Enterprises in the Xinxiang Xinyuan Project in 2002 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Average of 97-99	CFC-11 Consumption (MT) in 2003
1	Huixian Zijinshan Foam Plant	Dec. 89	84.3	0
2	Yanshi Foam Plant	March 94	86.2	0
3	Shangqiushi Foam Plant	Sept. 93	75.3	0
4	Shangqiushi Yongfeng Foam Plant	April 95	65.3	0
5	Zhengzhou Development Zone Foam Plant	Dec. 94	79.3	0
6	Wuzhi Fuli Foam Plant	Sept. 92	73.7	0
7	Yiyang jinjiu Foam Plant	April 93	85.3	0
8	Luoyang Jinling Foam Plant	April 95	87.3	0
	Total		**636.7**	**0**

Table 4.2: Enterprises in the Chengdu Jinjiang Project in 2002 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Average of 97-99	CFC-11 Consumption (MT) in 2003
1	Duocai Co. Ltd.	Feb. 93	76	0
2	Huiyu Co. Ltd.	March 94	86	121
3	Hongyang Foam Plant	April 94	76	110
4	Liuli Foam Plant	Oct. 91	80	125
5	Qianjin Foam Plant	Oct. 92	79	0
6	Dongzikou Foam Plant	June 89	79	0
7	Chongqing Jinjiang Foam Plant	Oct. 94	76	0
	Total		**552**	**356**

Table 4.3: Enterprises in the Zhejiang Chunhui Project in 2002 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 2001	CFC-11 Consumption (MT) Year 2003
1	Wujin Henglin Refrigeration Equipment Plant	Jan. 93	33.2	5.5
2	Wujin Luoyang Taihu refrigeration Equipment Plant	April 94	24.3	0
3	Wujin Youyi Regrigeration Equipment Plant	Aug. 92	16.58	0
4	Wujin Huanyu Freezing Equipment Plant	March 95	29.2	0
5	Wujin Xuelian Freezing Equipment Plant	April 94	32.4	4.5

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 2001	CFC-11 Consumption (MT) Year 2003
6	Wujin Yuzhou Freezing Equipment Plant	Dec. 93	17.5	0
7	Wujin Luoyang Dongfang Cold-Storage Factory	Jan. 93	26.5	5.67
8	Wujin Daixi Refrigeration Equipment Plant	Dec. 91	41.34	3.33
9	Wujin Snowball Refrigeration Equipment Plant	Dec. 92	27.3	5.92
10	Wujin Jinggong Refrigeration Equipment Plant	Aug. 88	25.8	3
11	Wujin Yueqiu Refrigeration Equipment Plant	Jan.93	29.7	0
12	Changzhou Snowball Refrigeration Equipment Plant	April 94	40.4	1.5
13	Changzhou Lidong Refrigeration Equipment Plant	March 94	41.25	0
14	Wujin Luoyang Refrigeration Equipment Plant	March 92	47	3.33
15	Wujin Hangyu Refrigeration Equipment Limited Company	May 95	34.8	1.67
16	Wujin Luoyang Metal Material Plant	Sept. 93	42	1.67
17	Wujin Huazhong Chemical Equipment Limited Company	April 94	33.14	2
18	Wujin Luoyang Cold-Storage Factory	Oct. 92	33.9	0
19	Wujin No.1 Refrigeration Equipment Plant	Jan. 92	58.72	3.67
20	Wujin Xinyue Refrigeration Equipment Plant	Oct. 92	79.65	3.83
21	Shengzhou Chunlian Refrigeration Equipment Plant	Aug. 82	30.63	0
22	Shangyu Tianyu Refrigeration Equipment Plant	Jan. 95	52.4	0
23	Shangyu Southeast Refrigeration Equipment Plant	June 93	41.7	0
24	Yuyao Moushan Xingsheng Refrigeration Equipment Plant	May 93	41.78	0
25	Zhejiang Commercial Machinary Company	Nov. 93	21	0
26	Hangzhou South Refrigeration Equipment Plant	July 81	22.4	0
27	Shangyu Refrigeration Equipment Plant	Jan. 94	40.3	0
28	Shaoxing Refrigeration Equipment Plant	Oct. 93	110.1	0
29	Shanghai Minhang Refrigerator Plant	March 90	42.74	0
30	Shanghai Lianglun Refrigeration Equipment Plant	Oct. 92	24.3	0
31	Shanyu LiDong Youlong Equipment Plant	March 90	22.95	0
	Total		**1164.98**	**45.59**

Table 4.4: Enterprises in the Nantong Xinyuan Project in 2003 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Average of 99-01	CFC-11 Consumption (MT) in 2003
1	Tongzhou Xianfeng Xinan Polyurethane Foam Plant	May 91	47.5	0
2	Tongzhou Xianfeng Polyurethane Foam Co. Ltd.	March 93	81.33	10.5
3	Nantong Haoli Laminating Textile Plant	Aug. 92	50.5	2
4	Tongzhou Nanxing Polyurethane Foam Plant	Aug. 92	50	0
5	Rugao Jinru Polyurethane Foam Co. Ltd.	June 94	82.67	10.5
6	Rugao Jixing Polyurethane Foam Co. Ltd.	Sept. 93	82.58	25.5
7	Xuzhou Tongshan Polyurethane Foam Plant	Aug. 90	78.25	0
8	Fengxian Pengya Polyurethane Foam Plant	April 95	41.67	8
9	Pizhou Kesheng Polyurethane Foam Co. Ltd.	Dec. 93	42.42	24.5
10	Dafeng Zhongyi Laminating Foam Plant	Dec. 86	44.52	23
11	Jiangyan Harbor Plastic Foam Plant	Nov. 91	46.67	12.5
	Total		**648.11**	**116.5**

Table 4.5: Enterprises in the Shaoxing Weike Project in 2003 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11Consumption (MT) Year 2001	CFC-11 Consumption (MT) in 2003
1	Shaoxing Weike Polyurethane Co.,Ltd.	Jan-95	221	113
2	Zhejiang New Southeast Limited Company	Jan-94	191.75	14
3	Shaoxing Anti-Corrosion Engineering Company	Jul-89	139	57.5
4	Shangyu Xingmao Equipment Plant	May-93	256	36
5	Shaoxing Jialong Engineering Company	Apr-88	190	53.02
	Total		**997.75**	**273.52**

Table 4.6: Enterprises in the Lanzhou Huayu Project in 2003 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 consumption (MT) Year 2001	CFC-11 Consumption (MT) in 2003
1	Lanzhou Huayu Innovation Technoogy	Sept. 88	201.35	316.50

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 consumption (MT) Year 2001	CFC-11 Consumption (MT) in 2003
	Co.,Ltd.			
2	Lanzhou Xinxin Polyurethane Material plant	July 94	64.22	21.50
3	Lanzhou Tianyuan Pipeline Plant	Oct. 94	34.18	15.20
4	Jiayuguan Fuli Foam Plant	April 91	48.16	82.415
5	Jiayuguan Hongsheng Building Material Limited Company	Feb. 94	37.28	18.90
6	Yinchuan Themal Insulation Material Limited Companuy	May 94	64.28	61.85
7	Yinhcuan Xingyuan Pipeline Plant	March 95	35.1	11.25
8	Gansu Zhenhao Trade Limited Company	Jan. 93	61.5	32.45
9	Ku'erle Xinying Limited Company	April 95	31.38	28.65
10	Lanzhou Xiangyun Goods Limited Company	May 95	22.08	11.05
11	Wulumuqi Haoyu Pipeline Limited Company	Feb. 93	69.5	56.03
12	Gansu Wuwei Wanbao Plant	July 94	26.24	11.00
13	Gansu Gaotai Hongfa Building Material Limited Company	March 95	20.53	4.55
14	Kelamayi Xiwang Hi-tech Development Company	Jan. 91	56.87	47.65
15	Ningxia Yinchuan Themal Insulation Material Plant	March 95	22.93	9.80
16	Xi'an Tongtai Limited Company	Oct. 92	22.7	12.05
17	Xi'an Hongxing Limited Company	Jan. 91	162.6	200.61
18	Shanxi Sida Engineering Limited Company	Oct. 94	71.55	23.55
19	Gansu Polyurethane Research Institute	Jan. 92	23	14.00
	Total		**1075.45**	**979.005**

Table 4.7: Enterprises in the Beijing Zhonghai Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT)	CFC-11 Consumption (MT) in 2003
1	Beijing Zhonghai Runda Co. Ltd.	Jan.29, 1994	0	0
2	Chengde Hongxing Refrigeration Equipment Co. Ltd.	Apr.26, 1992	116.75	95.875
3	Beijing Direct Insulation Pipe Plant	Dec.18, 1990	108.98	112.25
4	Beijing Xinxing Tiandi Insulation Material Co. Ltd.	Aug.4, 1990	68.11	72.14
5	Tianjin Lifeng Development Co. Ltd.	Apr. 26, 1992	111.44	124.625
6	Tianjin Xiatong Refrigeration Equipment Co. Ltd.	July 16, 1992	21.62	36.25

7	Tianjin Yuesheng New Material Research Institute	June 10, 1991	49	45
8	Hebei Jiangfeng Pipe Co. Ltd.	Jan. 1994	123.85	115.27
	Toal		**599.8**	**601.41**

Table 4.8: Enterprises in the Dalian Yuji Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT)	CFC-11 Consumption (MT) in 2003
1	Dalian Fishing Engine Industry Corporation	Dec.,1979	64.48	73
2	Dalian Zhongda Refrigeration Equipment Co., Ltd.	Feb.,1995	42.18	44.58
3	DEDZ Polyurethane Foam Corporation	Feb.,1993	39.22	31.25
4	Dalian Zhongshan Insulation Pipe Plant	May, 1993	28.02	32
5	Dalian Binshan Group Co. Ltd.	Mar.,1994	74.01	18.25
6	Dalian Xingsheng Insulation Material Plant	June,1995	32.97	6.5
7	Lushun Heat Prevention Material Products Factory	Jan.,1992	24.06	14
	Total		**303. 9**	**219.58**

Table 4.9: Enterprises in the Fenghua Yongxing Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT)	CFC-11 Consumption (MT) in 2003
1	Fenghua Yongxing Sponge Products Factory	May 8, 1992	168	167.45
2	Linan Sanxin Plastic Chemical Industry Co., Ltd.	Feb.18, 1992	62	59.2
3	Linhai Donghai PU Industry Company	March 2, 1994	56.5	56.91
4	Tiantai Cangshan Dongheng Sponge Factor	May 24, 1993	54	52.09
5	Ningbo Beilun Wangxing Culture and Education Sponge Products Co., Ltd.	May 14, 1993	49.5	46.4
6	Ningbo Beilun Chaiqiao Xinya Furniture Sponge Factory	March 15, 1995	27	25.12
7	Ningbo Haishu Huaxin Sponge Factory	May 2, 1994	25.5	24.4
8	Fenghua Renhe Vehicle Products Factory	May 20, 1993	21.5	19.87
9	Zhoushan Dinghai Xinrong Foam	June 8, 1994	20	18.42

	Plastic Products Factory			
	Total		**484**	**469.86**

Table 4.10: Enterprises in the Hejian Hongda Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 1999	CFC-11 Consumption (MT) Year 2003
1	Hejian Jinlong PU Antisepsis Heat Prevention Factory	March 1993	16.4	9.78
2	Hejian Longta PU Factory	May 1991	21.9	12.5
3	Hejian Dongli PU Heat Prevention Material Factory	April 1993	17	20.25
4	Hejian Fulai PU Heat Prevention Material Factory	Oct. 1993	19.7	29.75
5	Hejian Tianshan PU Heat Prevention Material Factory	Aug. 1992	19.4	20.95
6	Hejian Quanhai PU Heat Prevention Material Factory	March 1992	20.3	25.28
7	Hejian Ruifeng PU Heat Prevention Material Factory	May 1992	3.5	25.14
8	Hejian Fuhua PU Heat Prevention Factory	Sept. 1993	21.7	23.33
9	Hejian Gaotai PU Products Factory	March 1993	23.3	28.77
10	Hejian Tiancheng PU Heat Prevention Material Factory	July 1992	24.5	29.33
11	Hejian Bole PU Products Factory	May 1993	23.3	30.73
12	Hejian Huiyuan PU Heat Prevention Material Factory	April 1994	24.7	29.47
13	Hejian Canghe PU Products Factory	June 1992	17.1	12.57
14	Hejian Debao PU Factory	June 1994	24.1	25.14
15	Hejian Nianfa PU Heat Prevention Material Factory	March 1994	23.9	26.96
16	Hejian Xinyi PU Heat Prevention Material Factory	April 1993	24.6	18.86
17	Hejian Changtian PU Heat Prevention Material Factory	April 1993	3.8	29.05
18	Hejian Shengfa PU Heat Prevention Material Factory	Aug. 1993	3.7	31.85
19	Hejian Niansheng PU Heat Prevention Material Factory	Oct. 1993	22.3	22.35
20	Hejian Lixiang PU Heat Prevention Material Factory	March 1994	3.4	16.76
21	Hejian Qingfeng PU Pipe Factory	May 1993	3.8	25.28

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 1999	CFC-11 Consumption (MT) Year 2003
22	Hejian Hengchang PU Factory	Jan. 1994	4.6	0
23	Hejian Shenghua PU Heat Prevention Material Factory	March 1993	11.3	0
24	Hejian Jinsheng PU Factory	July 1993	21.4	0
	Total		**399.7**	**494.19**

Table 4.11: Enterprises in theNingbo Lantian Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 1999	CFC-11 Consumption (MT) in 2003
1	Jinan Lixia Zhenhua PU Factory	April 1994	41.76	104
2	Yantai Qianwei PU Refrigeration Heat Prevention Factory	March 1992	44.6	53
3	Yantai Chengxin Antisepsis Heat Prevention Engineering Co., Ltd.	1991	32.5	40
4	Jingjiang Chemical Industry Construction Material Company	Aug. 1994	22.75	35
5	Henan Huangpu Construction Installation Co., Ltd.	May 1993	84.5	32
	Total		**226.11**	**264**

Table 4.12: Enterprises in the Shanghai Jinyuanyuhua Project in 2004 Annual Program

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 1999	CFC-11 Consumption (MT) Year 2003
1	Xianghe Chuncheng Foam Plant	May 1994	90	125
2	Laishui Shulin Sponge Factory	March 1995	61	64
3	Linyi Lanshan Fuhe Sponge Factory	April 1991	83	124
4	Weifang Jinghua Sponge Factory	May 1995	41.5	83
5	Wenshui Nanqitengda Sponge Factory	August 1993	85.5	121.5
6	Xianghe Quanxing Sponge Factory	January 1995	63	60
7	Jinan Beiyuan Ruiyun Sponge Factory	May 1995	61	67
8	Zibo Zhoucun Fuli Sponge Factory	December 1989	75	123
9	Jiangdu Fuyang Sponge Factory	November 1994	44	49
10	Nanjing Junda Sponge Factory	February 1993	47.75	34
11	Yangzhou Hengyang Sponge Co. Ltd.	December 1994	45.5	41.5

SN	Name of Enterprise	Date of Establishment	Baseline CFC-11 Consumption (MT) Year 1999	CFC-11 Consumption (MT) Year 2003
12	Zhenjiang Huaxia Sponge Company	February 1995	49.75	33.25
13	Hefei Kangya Chemical Products Co. Ltd.	May 1995	45.5	50.5
14	Pinghu Jintang Sponge Factory	June 1992	47.5	33
15	Zhengzhou Xihu Sponge Co. Ltd.	April 1995	51.056	57.84
16	Henan Xuanyang Sanhuan Sponge Co. Ltd.	February 1995	46.726	58.47
17	Chengan Minzheng Plastics Foam Plant	October 1994	48.294	58.14
18	Heze Zhenye Sponge Co. Ltd.	September 1993	46.725	63.42
19	Gaocheng Foam Products Co. Ltd.	August 1993	54.337	59.92
20	Yanshi Dongxin Sponge Factory	April 1995	32.862	62.31
21	Daxian Dongteng Foam Plant	March 1995	32	63
22	Xian Yinfeng Sponge Co. Ltd.	June 1993	55	70
23	Hanzhong Xian Latex Plant	July 1993	46	60
24	Xian Changan Foam Plant	March 1993	58	72
25	Chongqing Jinrong Foam Co. Ltd	June 1995	58	63
26	Xian Yushan Sponge Co. Ltd.	July 1995	31	62
	Total		**1400**	**1747.85**

Sector Plan for Phaseout of ODS in Phase One of Chemical Process Agent Applications and Carbon Tetrachloride Production in China

2005 ANNUAL PROGRAM

August 27, 2004

Data Sheet

Country	China
Name of project	Sector Plan for Phaseout of ODS in Phase One of Chemical Process Agent Applications and Carbon Tetrachloride Production in China
Year of plan	2005
# of years completed	2
# of years remaining under the plan	5
Target ODS consumption of the preceding year	Not to exceed 5049 ODP Tons (Max.) for CTC consumption in 25 PA applications and 14 ODP tons for CFC-113
Target ODS consumption of the year of plan	Not to exceed 493 ODP Tons (Max.) for CTC consumption in 25 PA applications and 14 ODP Tons for CFC-113.
Target ODS Production of the year of plan	Not to exceed 38,686 ODP Tons of CTC production
Total MLF funding approved in principle	US$ 65 million
Total MLF funding released (by Oct 2004)	US$ 38 million
Level of funding requested	US$ 2 million

National Implementing operating agency	State Environment Protection Administration
International implementing agency	The World Bank

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Introduction

1. At its 38th meeting, the ExCom approved the "Agreement with the People's Republic of China to Phase-out CTC and Process Agents (Phase I)" (UNEP/Ozl.Pro/ExCom/38/70, Annex XIII), with total funding of $65 million. The 2003 Annual Programme for the CTC/PA sector plan of China has been effectively implemented. The 2004 Annual Programme is presently under implementation.

2. Under the 2003 and 2004 Annual Programme, China has initiated various sector phaseout activities, including the establishment of policies and regulations, enterprise-level phaseout activities and technical assistance activities. As a result, all the ODS production and consumption in 2003 met the targets under the Agreement (Table 1).

3. China is hereby requesting release of the forth tranche of US$ 2 million for the implementation of the 2005 Annual Program to meet the control targets of 2005 specified in the Agreement (Table 1).

Annual Phaseout Targets and Funding Level

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

Table 1: Allowable CTC Production, ODS Consumption in PA and Agreed funding

Year	ODP tons						US$ million
	Maximum allowable sum of production and imports of CTC (Row 1 of the Agreement)		Maximum allowable CTC consumption in PA Sector (25 applications) (Row 4 of the Agreement)		Maximum allowable CFC-113 consumption in the PA Sector (25 applications) (Row 6 of the Agreement)		Agreed funding
	Allowed	Verified	Allowed	Verified	Allowed	Verified	
Baseline /1	86,280	N/A	3,825	N/A	17.2	N/A	
2001*	64,152	N/A	4,347	N/A	17.2	N/A	
2002*	64,152	N/A	5,049	N/A	17.2	N/A	2
2003	61,514	59,860**	5,049	3,507***	17.2	17.2***	20
2004	54,857		5,049		14		16
2005	38,686		493		14		2
2006	32,044		493		10.8		16
2007	26,457		493		8.4		5
2008	23,583		493		0		3
2009	17,592		493		0		1
2010	11,990		220		0		
Total :							65

/1: For consumption, average of 1998-2000; for CTC Production, 2000 data.

* The sector plan was approved in November 2002 and the first control year is 2003.

** According to the Bank's 2003 CTC Production Verification Report as submitted to Ozone Secretariat in May 2004, total CTC production in 2003 was 56,230.87 MT, of which 1,813.08 MT was used for non-ODS feedstock applications. Therefore, the verified 2003 CTC production was 54,417.79 MT (59,859.57 ODP tonnes).

*** This is the purchased amount in 2003. The actual consumption is 3,080 ODP tons for CTC and 17.1 ODP tons for CFC-113.

Implementation Status of 2004 Annual Program

Activities and Progress in 2004

5. Phase-out targets in 2004 were as follows:

   (a) Total CTC production and imports will not exceed 54,857 ODP tons (49,870 MT). As CTC imports into China have been banned since April 1, 2000, the target will therefore be met by limiting the total CTC production in 2004 to not more than 54,857 ODP tons[1];

   (b) Total CTC consumption in the PA sector (25 applications) will not exceed 5,049 ODP tons (4,590 MT); and

   (c) Total CFC-113 consumption in the PA sector (25 applications) will not exceed 14 ODP tons (17.5 MT).

6. Policy actions in 2004 include:

   (a) CTC sales license system: The system was established in 2003 along with the CTC production and consumption quota licence system. SEPA started implementation of the system in 2004. At present, all the CTC dealers are registered and trained, and their CTC purchase and sale details are reported quarterly to SEPA.

   (b) CTC consumption license system: This system was established in 2003. In 2004, the license is extended to all CTC consumptions, including 25 PA applications, other new PA applications, non-ODS chemical feedstock applications and solvent. The consumers can buy CTC only with CTC consumption license. The CTC consumption will be reported as part of the reporting requirements established under the system.

   (c) CTC production quota license system: In 2004, quotas will be issued to all CTC producers consistent with the reulation. This will including newly-built chloromethane plants eligible for quotas under the system. If not eligible, producers will either have to buy quotas from quota holders, use the unavoidable CTC coproduction for feedstock applications only, or dispose it. Productions are required to report quarterly.

   (d) Annual verification: Annual verification of CTC production, CTC and CFC-113 consumption of 25 PA applicatgions will be conducted according to the established policies and reports from the enterprises to monitor the implementation of the annual program activities.

[1] During the meeting September 18, 2004 in Xian between the Multilateral Fund Secretariat, SEPA and the World Bank, it was confirmed and agreed that use of CTC for feedstock for non-ODS applications are not controlled by the agreement. It was also agreed that China are will verify the amount used for such applications. China will report such uses of CTC to the Ozone Secretariat according to Article 7 of the Montreal Protocol.

7. Enterprise-level activities in 2004 are comprised of three following types:

(a) CTC production target for 2004 is 54,857 ODP tons: Production quotas were issued to all 11 CTC producers, excluding the new producer that will start CTC production in 2004. The target will be realized by two ways: (1) Four dedicated CTC producers had their CTC production reduced from their 2001 levels; and (2) CTC quotas can be traded between licensed CTC producers.

(b) CTC and CFC-113 Consumption (25 PA applications): Consumption quotas of CTC and CFC-113 have been issued to 12 enterprises consumed CTC as PA and 4 PTFE producers respectively. Total of issued CTC consumption quota was 3209 ODP tons, less than the target of 5,049 ODP tons. Total of CFC-113 consumption quota issued was 14 ODP tons, same as the target.

(c) The following 18 phaseout contracts have been signed:

(1) CTC production sector: 8 contracts.

(i) **3** CTC production reduction contracts and **1** total production closure contract were signed with 4 dedicated CTC producers with total CTC production reduction of 7,740 MT (8,514 ODP tons). Chongqing Tianxuan (CTC-4) has phased out all its CTC production and dismantled its plant by the end of 2003. Chongqing Tiangsheng (CTC-5) is a CTC distilling plant and its 37 MT production quota has been reduced without compensation in accordance with the CTC production quota management policy. Thus the total CTC production reduction in 2004 will be 7,777 MT (8,555 ODP tons).

(ii) Additional 4 plant dismantling contracts were signed with 4 CTC producers. These four CTC plants had stopped production some years ago and will be fully dismantled by the end of 2004.

Table 2: CTC production contract and reduction

Sector Plan number	Enterprise	Contract type	Production reduced in 2004 (ton)	Plant status
CTC-11	Sichuan Honghe	Production reduction	3,627	Producing
CTC-8	Luzhou Xinfu	Production reduction	1,314	Producing
CTC-6	Chongqing Tianyuan	Production reduction	1,524	Its production was stopped because of chlorine leakage accident on April 16, 2004.
CTC-4	Chonqing Tianxuan	Production reduction and closed	1,275	Stopped in Dec 2003 and all CTC lines were dismantled in the end of 2003
CTC-5	Chongqing Tiangsheng	No contract	37	Producing
CTC-07	Taiyuan Chemical	Plant dismantling	0	Stopped since 1999
CTC-10	Guangzhou Hoton	Plant dismantled	0	This plant had closed in 1997 and all CTC facilities had been dismantled years ago

CTC-03	Panjiin No 3 Chemical Plant	Plant dismantling	0	Stopped since 1999
CTC-17	Jinan 3F	Plant dismantling	0	Stopped since 1994
	Total		7,777	

(2) PA sector: 10 contracts.

(i) A total of 3 emission control contracts were signed with two CR producers and one CSM producer respectively. Their per unit CTC consumption will be reduced to ensure the overall total allowed national annual CTC consumption will be lower than the limits set by the Agreement.

(ii) A total of 3 closure contracts were signed with one CP-70 producer and two endosulphan producers respectively. All CP-70 plants will be dismantled by the end of 2004. Both endosulphan producers have stopped their production and funding are only provided to cover the costs of dismantling their production lines by the end of 2004.

(iii) A total of 4 conversion contracts were signed: One contract were signed with Liaoning Fuxin, PTFE producer, which will convert CFC-113 into other non-ODS PA by the end of 2004. The other three companies have completed their conversion to non-ODS production process and the contracts will cover retroactively funding of the conversion. Among the three companies is Zhejiang Huahai, Ketotifen producer, which has converted CTC consumption into other non-ODS chemicals. The second contract is with Jiansu Meilan, PTFE producer, which has substituted its process and stopped its CFC-113 consumption before 2003. The third company is Jiangyin Fasten, CP-70 producer, which process were changed from CTC into water phase technology before December 2003.

Table 3: Contract list with PA enterprises

Sector Plan number	**Enterprise**	**Baseline (Ave. 1998-2000)**		**Nature of Contract**	**Year of Contract (Annual Program)**	
		ODS	MT		2003	2004
CR						
1	Shanghai Chlor Alkali	CTC	109	Emission control		√
2	Haotian	CTC	218	Closure	√	
3	Jiangsu Wuxi	CTC	313	Closure	√	
4	Zhejiang Xin'an	CTC	142	Closure	√	
5	Jiangyin Fasten	CTC	178	Emission control		√
6	Henan Puyang	CTC	43	Closure	√	
170	Zhejiang Shangyu Qiming	CTC	119	Closure	√	
CP-70						
4	Zhejiang Xin'an	CTC	82	Closure	√	
5	Jiangsu Jiangyin Fasten	CTC	161	Converted Retroactive Contract		√
18	Shengyang	CTC	48	Closure	√	

19	Sichuan Luzhou Hongyuan	CTC		Dismantled in 2002	Not eligible for funding	
20	Sichuan Longchang Shouchang	CTC	62	Closure	√	
21	Sichuan Longchang Shenghua	CTC	73	Closure	√	
22	Chongqing Tianyuan	CTC	45	Closure	√	
23	Zhejiang Longyou Lude	CTC	48	Closure	√	
24	Dalian Jiangxi	CTC	233	Closure	√	
25	Harbin Yibin	CTC	38	Closure	√	
45	Shangxi Fenyang	CTC	0	No longer in existence		
71	Hebei Huanghua	CTC	N/a	Closure		√
CSM						
51	Jilin	CTC	878	Emission control		√
54	Hunan Hongjiang	CTC	0	No longer in existence		
55	Jilin Jiaohe	CTC	0	No longer in existence		
Ketotifen						
59	Zhejiang Huahai	CTC	13	Conversion		√
Endo-sulphan						
	Jiangyin Anbang	CTC	24	Closure		√
	Jiansu Liyan Chemical	CTC		Closure		√
PTFE						
56	Shanghai 3F	CFC 113	11	Emission control	√	
57	Sichuan Chengguan	CFC 113	5	Emission control	√	
166	Shanghai Tianyuan	CFC 113			The plant had been merged into Shanghai 3F (56)	
167	Shandong Jinan 3F	CFC 113	4	Emission control	√	
168	Jiangsu Meilan	CFC 113	2	Converted		√
169	Liaoning Fuxin	CFC 113	1	Conversion		√

8. Technical assistance (TA) is an important part of the activities. In 2004, the TAs process is described as follows:

   (a) *Training of personnel involved in implementation of phaseout activities.* Three training workshops respectively for CTC producers, PA enterprises and CTC dealers were held

in December 2003, March and June 2004.The training workshop for auditors will be held in the 1st quarter of 2005.

(b) *Domestic Investigation and Verification of New Feedstock Applications of Carbon Tetrachloride:* This is an additional TA to 2004 AP and has been completed before May 2004 according to the approved TORs.

(c) *International Investigations on New Feedstock Applications of Carbon Tetrachloride:* This is an additional TA to 2004 AP. The TOR is approved by the World Bank in May 2004. The project is under preparation for implementation.

(d) *Study on CTC Incineration Technologies and Management:* This is an additional TA to 2004 AP. The TOR is waiting for the clearance of World Bank.

(e) *2004 International Workshop of carbon tetrachloride Conversion and Incineration Technologies:* This is an additional TA to 2004 AP and the workshop will be held during the 2004 Ozone Day celebrations.

(f) *Daily site supervision for CTC producers:* The site supervisor training workshop has been conducted in December 2003 and 20 supervisors were trained. From January 1, 2004, these site supervisors, technical professionals recruited from CTC producers by SEPA, were assigned to CTC producers to implement site supervision of CTC production.

(g) *Performance audit:* The performance audit for 2003 has been completed by 30 June 2004.

Two TA activities under 2003 Annual Program are continued to be implemented in 2004.

(h) *Extension of the Management Information System (MIS) to include ODS Phaseout in PA and CTC Production:* The TOR is cleared by the Bank in June 2004 and the contractor is under selection through bidding process. The system is planned to be established by end of 2004.

(i) *Consulting Services on Conversion of CFC-113 Substitute Technologies in PTFE Production and Emission Control in CSM Production:* Three individual consultants were recruited to provide technical services to related PTFE enterprises and review the technical proposals and estimate project funding. Consulting services to CSM producer will be conducted if necessary.

2005 ANNUAL PROGRAM

9. **The targets for the 2005 Annual Program,** according to Table 1, are as follows:

   (a) Total CTC production and imports will not exceed 38,686 ODP Tons (35,169 MT);

   (b) Total CTC consumption in the PA sector (25 applications) will not exceed 493 ODP Tons (448 MT); and

   (c) Total CFC-113 consumption in the PA sector (25 applications) will not exceed 14 ODP Tons (17.5MT).

10. Funding for the 2005 Annual program will be allocated for CTC production reduction in CTC producers, ODS phaseout in PA enterprises by closing plants or conversion to substitute technologies, CTC emission control, and for technical assistance activities, which are described in detail below. As seen from the table 4, 5 and 6, the overall costs of the 2005 AP exceed the funding available for the 2005 program. Unallocated balances from 2004 will be used to cover the balance. In addition, funding of some activities mght have to be defered to 2006.

Programmed Activities In 2005

11. ***Policy actions.*** In 2005, the following policies and measures will be implemented to ensure a successful ODS consumption and CTC production reduction targets in China**.**

   (a) Management of established CTC production and consumption quota-license system, and sales registering system: These systems established in 2004 will continue to be implemented in 2005. Under these systems, CTC production and consumption will only be permitted with a licence issued by SEPA, and only the dealers which have registered in SEPA can sell CTC. Under the series of production, consumption and sales management, CTC production and PA sector plan will be effectively implemented. These systems will be further enforced by coordinating with local EPBs and local industry administrative department.

   (b) Annual reporting and verification: All CTC production, consumption and sales data will be reported quarterly by CTC producers, consumers and dealers for monitoring, tracing and controlling. Annual verification of production, consumption and sales will be conducted consistent with the agreement. The implementation of all annual program activities and uses of CTC.[1] will be monitored and supervised by the SEPA PA/CTC working team and the DIA through the system established.

12. ***Enterprise-level activities.*** There will be four types of activities at the enterprise level: production reduction and closure for CTC producers, and emission control and technical conversion for PA enterprises. All these activities will be based on assignment of quotas and signature of contracts.

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1 CTC consumption as the feedstock of non-ODS chemicals will also be reported quaterly by CTC producers, dealers and consumers respectively.

(a) *CTC production quota - licenses for CTC producers:* CTC production Quotas will be assigned to each CTC producer to ensure that the maximum allowable CTC production limit of 38,686 ODP Tons in 2005 is not exceeded. One dedicated producer, Chongqing Tianyuan, will be closed and completely phased out its CTC production. CTC production phaseout/reduction contracts will be signed between the govermment and 3 CTC producers.

(b) *Consumption quota licenses for PA enterprises:* Quotas will be assigned to each PA enterprises to ensure that the maximum allowable consumption limits in 25 applications are not exceeded the control targets in the Agreement.

(c) *The implementation of conversion and emission control contracts on ODS consumption phaseout:* - the two emission control contracts with CR producers (Shanghai chlor-Akali and Jianyin Fasten), and one conversion contract with PTFE enterprise (Liaoning Fuxin) will be signed in 2004. The implementation will mainly happen in 2005.

13. ***Technical assistance activities.*** TA activities are essential to the success of the phaseout objectives. 2004 TA activities will include:

(a) *Training of personnel involved in implementation of phaseout activities.* To implement the phaseout plan effectively, it is necessary to provide training to CTC producers, ODS consumers in the PA Sector, CTC dealers, and auditors. Training is also needed for enterprises to understand the closure procedures.

(b) *Daily site supervision to CTC producers.* This TA started from 2003 and is implemented successfully in 2004. It will continue in 2005 and the following years. Its purpose is to strengthen the management of CTC production. All the CTC producers (except 2 distillers) will be put under daily site supervision by technical professionals who will be selected from CTC producers and dispatched by SEPA according to the "Circular on Implementing Site Supervision to Carbon Tetrachloride Production Enterprises" promulgated on July 10, 2003. Daily production records will be made by the supervisors and monthly report will be prepared and submitted to SEPA.

(c) *Performance audit.* A performance audit is required under the CTC sector plan and PA sector plan. A TOR for the 2004 performance audit will be agreed between the World Band and SEPA by December 2004, and the audit is expected to be completed by June 30, 2005.

(d) The World Bank will independly verify CTC and CFC-113 production and consumption consistent with the ExCom agreement and the clarification agreed September 18, 2004 n Xian. The Bank verification will start after the Chinese new year and be carried out in February and March 2005.

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

14. The above targets, policy initiatives, enterprise-level and technical assistance activities in 2005 are summarized in Tables 4 - 6 below.

Table 4: Targets under 2005 Annual Program

Target I: Maximum Allowable sum of production and Imports of CTC							
Indicators	**Sub-sector**	**2004** (Preceding Year)	**2005** (year of Program)	**Reduction**	**Funding**	**Key actions required**	**Key dates**
		(ODP Tons)			$ million		
Supply of CTC	Import	0	0			None; imports banned on April 1, 2000	N/A
	CTC Producers	54,857	38,686	16,171	12 *	1. Issue CTC production quota-licenses. 2. Sign CTC production reduction contracts with CTC producers	1. By March 31, 2005 2. By Dec. 31, 2004
	Subtotal	54,857	38,686	16,171	12		
Target II: Maximum Allowable CTC Consumption in the PA Sector (25 Applications)							
CTC Consump-tion	Related PA enterprises	5,049	493	4,556	0 (all contracts signed in 2004)	1. .Issue CTC consumption quota-licenses.	1. By Dec. 31, 2004
Target III: Maximum Allowable CFC-113 Consumption in the PA Sector							
CFC-113 Consump-tion	Related PTFE Manufac-turers	14	14	0	0	1. Issue CFC-113 consumption quota-licenses.	1. By Dec. 31, 2004

*: The estimated CTC reduction costs would depend of the outcome of the bidding process,but is estimated costs around US$12 million. The 2005 MLF funding is only 2 million. As this is not sufficient for the implementation of 2005 AP, the deficiency will be complemented by unallocated balances from 2003-2004 AP and/or funded retroactively in 2006/2007 when the 2006 annual funding is released from ExCom and available to China.

Table 5: Policy Actions and Enterprise activities in 2005

Initiatives	Funding (US$ Million)	Actions Required	Key Dates
1. Management of CTC Production	12*	1. Train CTC producers 2. Sign CTC production reduction/closure contracts with 3 CTC producers 3. Issue CTC production quota-licenses 4. Implement CTC production reduction contracts, including production reporting and verification	1. By Nov. 30, 2004 2. By Nov. 30, 2004 3. By March 31, 2005 4. Through 2005
2.Management of CTC and CFC-113 consumption (25 applications)		1. Train PA enterprises 2. Issue CTC and CFC-113 quota-licenses 3. Implement the contracts, including collection and verification of contracts' progress situations.	1. By Dec. 31, 2004 2. By Dec 31, 2004 3. Through 2005
3. Management of CTC sales		1. Issue CTC sales registering certification 2. Train CTC vendors 3. Collect CTC sales data and verify CTC sales situations	1. By Dec. 31, 2004 2. By Dec. 31, 2004 3. Through 2005
Subtotal	12*		

Table 6: Technical Assistance Activities in 2005

Initiatives	Funding (US$ Million)	Actions Required	Key Dates
1. Training of personnel involved in implementation of phaseout activities	0.1	1. TOR to be agreed with the World Bank 2. Training all CTC producers, PA enterprises and CTC dearlers on CTC production reduction, ODS consumption phaseout approaches in PA sector, quota-license system, supervision and verification system, project implementation manual, and funding contracts.	1. By Nov. 30, 2004 2. By Dec. 31, 2004. Specific schedules to be detailed in TORs
2. Daily site supervision to CTC producers	0.3	1. TOR to be agreed with the World Bank 2. Implementation of site supervision	1.By Nov. 30, 2004 2. Through 2005
3. Performance audit for 2004	0.1	1. TOR to be agreed with the World Bank 2. Audit implementation 3. Audit completion	1. By Jan. 31, 2005 2. By April 30, 2005 3. By June 30, 2005
4. Other activities	0.3		
Subtotal	0.8**		

** Costs to be covered within the estimated US$12 million.

Annex I
Table I-1: Production and Status of CTC producers

No.	Enterprise Name	Type of CTC production facility	Capacity in 2001* (MT/year)	CTC Production Recorded				Status
				2001	2002	2003	2004 (Jan-June)	
CTC-1	Luzhou North Chemical Industrial Co., Ltd.	Co-production	3,000	2,106	2,318	2,105	1,143	Producing
CTC-2	Zhejiang Quhua Flurochemical Co. Ltd.	Co-production	20,000 (22,250)	16,204	17,217	16,204	8,305	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	8	Producing
CTC-6	Chongqing Tianyuan Chemical General Plant	Dedicated	9,000	8,009	8,198	6,114	1,337	Stopped
CTC-7	Taiyuan Chemical Industrial Co., Ltd.	Dedicated	4,000	0	0	0	0	To be dismantled in 2004
CTC-8	Luzhou Xinfu Chemical Industry Co. Ltd.	Dedicated	8,000	6,903	7,754	5,203	2,048	Producing
CTC-9	Jiangsu Meilan Chemical Co., Ltd.	Co-production	3,500 (10,000)	703	2,929	3,396	1,602	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	7,750	Producing
		Dedicated	16,000 (17,750)	13,806				Producing
CTC-12	Shanghai Chlor-Alkali Chemical Co., Ltd.	Co-production	10,000	7,209	9,192	7,209	3,289	Producing

Annex I

Table I-1: CTC producution and Status of CTC producers (Continued)

No.	Enterprise Name	Type of CTC production facility	Capacity in 2001* (MT/year)	CTC Production Recorded				Status
				2001	2002	2003	2004 (Jan-June)	
CTC-13	Quzhou Jiuzhou Chemical Co., Ltd.	Distilling	1,000	596	477	594	222	Producing
CTC-14	Wuxi Greenapple Chemical Co., Ltd.	Co-production	0 (2,000)	0	0	495	558	Producing
CTC-15	Shandong Jinling Chemical Co., Ltd.	Co-production	0 (2,000)	0	0	148	831	Producing
CTC-16	Shandong Dongyue Chemical Co., Ltd.	Co-production	0 (2,500)	0	0	0	0	Will start production in September 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	27,085	
Total (ODP tons)				67,465	79,602	59,860**	29,794	

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

**: There are 1,813 MT CTC to be verified as feedstock for non-ODS chemicals in 2003.

Annex II

Table II-1: ODS Consumption in 25 Applications (1997-2003)

ODS	Application No.	Products	Annual consumption of ODS, t/a							
			1997	1998	1999	2000	2001	2002	2003	
									Purchased	Consumed
CTC	C3	CR	1290	1154	1097	1118	965	933	985	920
	C4	Endosulfan			20	53	88	72	359	231
	C7	CSM	710	720	839	1074	1119	967	1338	1017
	C12	CP-70	900	818	1008	1016	899	961	694	817
	C17	Ketotifen	9	12	11	16	26	25	6	11
	Total		2909	2704	2963	3277	3097	2958	3382	2996
CFC-113	C9	PTFE	5.65	5.85	27.6	34.1	53.0	59.8	21.5	21.39

Table II-2: CTC Consumption and Production Status of PA consumers (CR enterprises)

Sub-Sector No.	No	Enterprises Name	Capacity (MT/year)	CTC Consumption (MT/year)								Production (MT/year)					
				1997	1998	1999	2000	2001	2002	2003		1999	2000	2001	2002	2003	Status
										Pur	con						
1	CR1	Shanghai Chlor-Alkali Chem. Co Ltd	450	144	115	118	95	143	178	223	205	131	119	239	329	423	
2	CR2	Haotian Chem Co Ltd.	500	281	252	199	202	174	196	200	168	181	171	141	168	190	
3	CR3	Wuxi Chem Group Co Ltd	1000	370	284	345	311	123	89	128	133	444	369	194	172	265	Dismantled in July 2004
4	CR4	Zhejiang Xin-an Chem. Group Co Ltd	500	121	162	142	123	96	129	221	221	412	352	299	360	465	
5	CR5	Jiangyin Fasten Co Ltd	1000	300	247	144	144	150	162	213	193	380	462	478	523	703	
6	CR6	He-nan Puyang oilfield CR Factory	500	29	12	19	97	135	33	0	0	23	119	167	91	0	Dismantled in Jan 2004
170	CR7	Shangyu Qimin Chemical Co., Ltd	500	45	82	130	146	144	146	0	0	402	456	427	439	0	Dismantled in Jan 2004
		Sub-total	4450	1290	1154	1097	1118	965	933	985	920	1973	2048	1945	2082	2046	

Table II-3: CTC Consumption and Production Status of PA consumers (CP-70 enterprises)

Sub-Sector No.	No	Enterprises Name	Capacity (MT/year)	CTC Consumption (MT/year)								Production (MT/year)					Status
				1997	1998	1999	2000	2001	2002	2003 Pur	2003 Con	1999	2000	2001	2002	2003	
171	CP1	Huanghua City Jinghua Chem. Co., Ltd.	3000	21	23	73	375	250	200	90	106	363	1500	1000	800	546	
4	CP2	Zhejiang Xin-an Chem. Group Co Ltd	500	61	73	85	88	94	99	Included in its CR consumption		428	440	490	544	554	
5	CP3	Jiangyin Fasten Co Ltd	800	280	243	240	Converted into water method					600	Dismantled in 2001. New one put into operation in 2003.				
18	CP4	Shenyang Chem. Co Ltd.	1500	160	89	16	38	76	56	44	60	158	441	546	569	683	
19		Luzhou Longmatanqu Hongyuan Chemical Co., Ltd.	Not eligible, and dismantled in 2002.														
20	CP5	Longchang Shouchang Chem Co Ltd	500	78	67	56	64	53	64	141	146	265	241	198	257	560	Dismantled in Feb 2004
21	CP6	Longchang Shenghua Chem Factory	1000	34	65	83	72	105	89	98	102	369	374	546	510	788	
22	CP7	Chongqing Tianyuan Chemical General Factory	500	0	0	70	64	0	0	0	0	173	166	0	0	0	Dismantled in Dec 2003
23	CP8	Longyou Lude Pesticide Chem Co Ltd	300	49	51	45	48	9	0	0	0	267	314	61	0	0	Dismantled in 2002
24	CP9	Dalian city Jiangxi Chem Ind Head Co.	3000	198	188	287	224	246	423	260	341	1647	1333	1866	2103	2149	
25	CP10	Harbin Yibin Chem Ind. Co Ltd	1000	19	19	20	43	66	30	61	62	383	409	481	803	1035	Dismantled in Jan 2004
45		Shanxi Fenyang Catalyst Factory	500	No longer in existence													Closed or dismantled?
		Sub-total	12600	900	818	1008	1016	899	961	694	817	4653	5218	5732	5586	6315	

Table II-4: CTC Consumption and Production Status of PA consumers (CSM, Ketotifen, Endo-sulphane)

Sub-sector No.	No.	Enterprise Name	Product name	Capacity (t/y)	CTC consumption (Mt/y)								Production (MT/year)					Status
					1997	1998	1999	2000	2001	2002	2003		1999	2000	2001	2002	2003	
											Pur	Con						
51	CSR1	Jilin Chem. Ind. Co Ltd	CSM	3000	710	720	839	1074	1119	967	1338	1017	2298	2628	2995	2727	2774	
54	CSR2	Hongjiang Chem Co Ltd	CSM	300	stopped													
55	CSR3	Jiaohe Organic Chem Factory	CSM	1000	stopped													
59	KET1	Zhejiang Huahai Pharm Group Co Ltd	Ketotifen	3	9	12	11	16	26	25	6	11	0.53	0.75	0.13	1.25	1.4	Converted in 2003.
	ES1	Jiangyin Anbang Electro-Chemical Co., Ltd.	Endo-sulphan	1000			20	53	88	72	165	37.4	77	100	500	411	423	
	ES2	Jiansu Liyan Chemical Factory	Endo-sulphan	1200					80	95	194	194			160	190	388	

Table II-5: CFC-113 Consumption and Production Status of PA consumers (PTFE)

Sub-sector No.	No.	Enterprise Name	Capacity (t/y)	CFC-113 consumption (Mt/y)								Production (MT/year)					Status
				1997	1998	1999	2000	2001	2002	2003 Pur	2003 Con	1999	2000	2001	2002	2003	
56	PTFE1a	Shanghai 3F New Materials Share Co Ltd (Plant No 2)	6500 (Include non-eligible capacity from No. 166,)	0.25	1.75	12	18	25.2	25.2	5.5	5.5	878	1241	1402	1436	1558	
	PTFE1b	Shanghai 3F New Materials Share Co Ltd (Fluoro Plant)								4.5	4.5					1644	
57	PTFE2	Chenguang Chem Research Institute	3000	0	0	7.9	7.9	8.0	8.1	3.5	3.39	1024	1368	1846	2239	3389	
166		Shanghai Tianyuan Group Fluor-Chem	The plant was merged into Shanghai 3F as No. 56 PTFE1b														
167	PTFE3	Jinan 3F Chemical Co Ltd	1500	4.4	3.1	4.1	4.2	6.1	6.5	5	5	831	1040	1474	1454	2270	
168	PTFE4	Jiangsu Meilan Chemical Co Ltd	3000	0	0	1	1.5	11	17	0	0	1050	820	1500	1643	2268	
169	PTFE5	Fuxin Fluor-chemical Co Ltd	2000	1	1	2.6	2.5	2.7	2.9	3	3	1200	1200	1300	2000	1498	
		Total		5.65	5.85	27.6	34.1	53.0	59.8	21.5	21.39	4983	5669	7522	8772	12627	

ANNEX III

Technical Assistance Activities (2003-2004)

Table III-1: Implementation of TA Activities in the 2003 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CTC-2003-TA-01	Extension of the MIS to include ODS Phaseout in PA and CTC Production		2004-06	2004-12-31	**Under implementation** The MIS will be integrated into PMO's MIS system and is being proceeded by IT group of FECO.
CTC-2003-TA-02	Investigation of substitute technologies for PA enterprises				**Cancelled** Because most enterprises decided just closed their production lines. Fewer enterprises investigated the substitute technologies by their own.
CTC-2003-TA-03	Investigation of Conversion of CTC to other (non-ODS) Products				**Cancelled** This was integrated with TAs in 2004.
CTC-2003-TA-04	Training of personnel involved in implementation of phaseout activities	SEPA	2003-01	2003-9-30	**Completed.** Training was organized for CTC producers, consumers, dealers and auditors.
CTC-2003-TA-05	Site supervision at CTC production enterprises in 2003	SEPA	2003-06	2003-6-30	**Completed.** Only the supervisor were selected and trained. The site supervision was cancelled in 2003 because of the late issuance of CTC production quota.
CTC-2003-TA-06	Study of Market Prospects for CTC Producing Enterprises	8 CTC producers: They are 1) Zhejiang Quhua 2) Shanghai Chlor-Alkali 3) Jiangsu Meilan 4) Luzhou Xinfu 5) Sichuan Honghe 6) Luzhou North 7) Chongqing Tianxuan 8) Chongqing Tianyuan	2003-12	2004-6-30	**Completed** All these 8 CTC producers studied the market and technology of their selected one or two products. Some producting line are under construction or to be constructed. The completed reports were submitted. It's proved to be a successful TA.
CTC-2003-TA-07	Consulting Services on CFC-113 and CTC Emission control	Three individual consultants	2003-10	2004-3-31	**Under implementation** The related PTFE enterprises prepared the technical proposals on CFC-113 consumption reduction. The consultants reviewed these proposals and commented the technology feasibility and costs estimation. The project will be commissioned by September 2004.

Table III-2: Implementation of TA Activities in the 2004 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CTC-2004-TA-01	Training of personnel involved in implementation of phaseout activities	SEPA	2004-01	2004-12-31	**Under implementing** Training for CTC producers, consumers, dealers are finished, for auditors will be executed in the beginning of 2005.
CTC-2004-TA-02	Domestic Investigation and verification of new feedstock applications of CTC	4 individual consultants were recruited	2004-8[1]	2004-6-30	**Completed** The report was submitted and the CTC applications and amount as the feedstock of non-ODS chemicals were collected.
CTC-2004-TA-03	International Investigation on new feedstock applications of CTC	To be selected through bidding process	2004-6	2005-10-31	**Under implementation**
CTC-2004-TA-04	Study on CTC incineration technologies and management	To be selected through bidding process		2005-10-31	**TOR is under the clearance**
CTC-2004-TA-05	2004 International workshop of CTC conversion and incineration technologies	SEPA	2004-9-01	2004-9-31	**Completed**
CTC-2004-TA-06	Daily Site supervision for CTC producers	SEPA	2004-01	2004-12-31	**Under implementation**

[1] The contracts with consultants were signed after the project has been completed due to time limited before the survey started.

THE CFC PRODUCTION SECTOR

CHINA

2005 ANNUAL PROGRAM

October 7, 2004

Data Sheet

Country	People's Republic of China
Project title:	Sector Plan for CFC production phase-out in China
Year of plan	2005
# of years completed	6
# of years remaining under the plan	5
Ceiling for 2004 CFC production (in ODP tons), 2004 Annual Plan	25,300 ODP tonnes
Ceiling for 2005 CFC Production (in ODP tons), 2005 Annual Plan	18,750 ODP tonnes
Total funding approved in principle for the CFC sector plan	$150 million
Total MLF funding released to the Bank by September 2004	$85 million
Total funding disbursed from the World Bank to China by September 2004 (excluding supporting fee)	$65.5 million
Level of funding requested for 2005 Annual Plan	$13 million

National Implementing operating agency	State Environment Protection Administration
International implementing agency	The World Bank

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Introduction

1. According to the Executive Committee's approval of the "Agreement for the China Production Sector" (UNEP/Ozl.Pro/ExCom/27/48, Decision 27/82 and Annex IV), in order to implement the 2005 Annual Program, China is hereby requesting release of the seventh tranche of US$13 million. With this funding, China's CFC production will be reduced to a maximum of 18,750 ODP tons by the end of 2005. The production quotas issued will also ensure that the ceiling on overall national CFC-11 consumption of 10,400 MT for 2005 required in the "Agreement for CFC Phase-out in the Polyurethane Foam Sector in China" (UNEP/OzL.Pro/ExCom/35/19, Annex VIII) is met. Details of the 2005 annual program are provided in Section B.

2. Following the approval of the China CFC Production Sector Plan at the 27th Meeting of the ExCom in March 1999, China has been implementing the phaseout project according to the agreed phaseout plan. Through this period, China has also developed supporting policies and regulations. There were 37 CFC production plants in China in 1999, and the number has been reduced to 6 producers in 2004. CFC production has correspondingly been reduced from 50,351 ODP tons in 1997 to 29,986 ODP tons in 2003, and will not exceed 25,300 ODP tons in 2004.

3. In accordance with the phaseout schedule in Montreal Protocol about CFC-13, an ODS in Group I Annex B. The control baseline of CFC-13 production is 26.7 ODP tons (average of 1998-2000). China had reduced its production from 27 ODP tons to 21.3 ODP tons in 2003.

4. ***China's CFC phaseout obligations.*** Within the Sector Plan, China agreed to the following phaseout schedule for CFCs in Group I Annex A and Group I Annex B. The phaseout of CFC-13 in Group I Annex B will go consistent with the requirements of the Montreal Protocol, that is, its production will be reduced 20 percent in 2003, 85 percent in 2007 and 100 percent in 2010 compared to the baseline production of 26.7 ODP tons. CFC-113 consumption is also partially regulated through the CTC/PA and solvents agreements.

Table A.1: CFC Production Phaseout Schedule[1/] and Annual Grant

Year	Annual Grant Funding	Agreed maximum production	Maximum allowed production (based on quotas issued to producers)	Actual Production (confirmed by World Bank verification team)
	(ExCom Decision 27/82, Annex IV)			
	US$ (million)	(ODP tons)		
1999	20	44,931	44,853	44,793
2000	13	40,000	39,998	39,991
2001	13	36,200	36,198	36,196
2002	13	32,900	32,898	32,896
2003	13	30,000	29,998	29,986
2004	13	25,300	25,298	
2005	13	18,750		
2006	13	13,500		
2007	13	9,600		
2008	13	7,400		
2009	13	3,200		
2010	0[2/]	0		

1/ The baseline year for CFC production phaseout is 1997. Baseline year production of CFCs (comprising CFC-11, CFC-12, CFC-113, CFC-114, CFC-115, and CFC-13) was 50,351 ODP tons.

2/ Savings from earlier years would be used for funding the 2010 phaseout.

5. As can be seen from Table A.1, CFC production was below the annual targets in each of the years of the program. The annual production of CFCs is shown in the table A.2 below.

Table A. 2: CFC Production broken down by CFC (ODP tons)

Annual Program	**CFC-11**	**CFC-12**	**CFC-113**	**CFC-114**	**CFC-115**	**CFC-13**
1999	22,684	18,521	3,379	0	163	46
2000	16,113	20,411	3,300	7	132	27
2001	14,099	19,257	2,700	7	106	27
2002	15,771	14,755	2,200	29	114	27
2003	13,828	14,249	1,700	0	187	21.28
2004 (Jan-June, reported)	7,237	7,264	1,374	0	224	15.22

6. 39 technical assistance activities have been planned, including activities to strengthen the implementation capacity and conversion capacity of closure enterprises, preparation of standards to ensure quality and reliability of CFC substitutes, and CFC production monitoring, etc.

7. Three other activities have been taken up. Under the first, Government is supporting the construction of a facility to produce HFC-134a. The second, the screening of alternatives to

Methyl Bromide in soil fumigation was taken up to screen out effective alternatives for tested crops, and to provide references for policy-makers. The third is China Country Compliance Center Activities.

8. The detailed implementation status of the 1999 – 2004 Annual Programs is provided in Part A.

PART A

IMPLEMENTATION STATUS OF PREVIOUS YEARS' ANNUAL PROGRAMS

As of June 2004

Phaseout Target

1. Starting with a baseline production of 50,351 ODP tons in 1997, China has issued production quotas each year that have enabled its producers to successfully meet the annual production targets specified in the agreement between China and the ExCom. The annual production in each year has been confirmed by both a national audit of the annual program (conducted by the China National Audit Office) and an international verification of production commissioned by the World Bank. The annual phaseout targets, production quotas issued to meet those targets, and the verified actual production for the first five years' annual programs are summarized in Table 1 above. In the year 2004, there are six remaining CFC producers, and quotas for production of 25,298 ODP tons have been issued to them to meet the production reduction target of 25,300 ODP tons.

Enterprise Phaseout Activities

2. Details regarding the enterprise phaseout and production activities in the 1999-2004 Annual Programs are summarized in Annex 1. Starting with 37 identified enterprises in 1999 (36 covered under the technical audit commissioned by the ExCom and one additional enterprise identified later), 31 enterprises have completely closed and dismantled their facilities of CFC-11, 12 and 113 under the Sector Plan, accounting for closure of capacity for production of 79,430 MT of CFCs. All reduction in 1999 was through closure of enterprises. Starting in 2000, the required reduction in production has been achieved through a combination of closures and reduction of quotas given to enterprise through quota buy-back. A total of 6 CFC producers remain in operation in 2004. Three enterprises are producing CFC-11 and/or CFC-12, one enterprise is producing CFC-11, CFC-12, CFC-113 and CFC-115, one enterprise is the only producer of CFC-13 in China and the last producer is producing CFC-114 and CFC-115.

3. The 1999 Annual Program comprised three sets of closures. *Firstly,* under the production sector agreement, China committed to close and dismantle production facilities at 14 enterprises (listed in the agreement between China and the ExCom) that had not been in production in 1997 (though one of these lines did produce some CFCs in the early part of 1999, prior to the agreement). SEPA signed closure contracts with these 14 enterprises, resulting in a reduction of production capacity of 22,630 MT (Annex 1, Table 1.1). *Secondly,* contracts were also signed with 3 other enterprises for closing down production lines that had no production in 1997, resulting in a further reduction of production capacity of 4,000 MT (Annex 1, Table 1.2). *Finally,* after the quota regulation and bidding for 1999 quotas, contracts were signed with 7 enterprises to phase out additional production capacity of 23,800 MT (Annex 1, Table 1.3). Through above activities, the 1999 phaseout target has been achieved with 44,793 ODP tons actual production which was within the 44,853 ODP tons quotas issued.

4. Under the 2000 Annual Program, closure contracts were signed with 5 enterprises so as to enable a phase out of production capacity totaling 15,500 MT in 2000 (Annex 1, Table 1.4) and one enterprise accepted a reduction in quota. Through this approach, 4,931 ODP tons phaseout target in 2000 was realized.

5. Under the 2001 Annual Program, the actual production of CFCs must at least be reduced from 40,000 ODP tons to 36,200 ODP tons. In order to achieve this target, three producers were closed, and contracts for complete closure were signed in November 2000 with these three enterprises, enabling a total reduction in production capacity of 7,500 MT (Annex 1, Table 1.5).

6. Under the 2002 Annual Program, the phaseout target of CFC production was 3,300 ODP tons. The production of CFCs needed to be reduced from 36,200 ODP tons to 32,900 ODP tons. As no CFC producers bid to close their production lines, CFC production quotas were reduced by administrative measures, and quota reduction contracts were signed with 6 of the 7 CFC producers, with one enterprise's quota being retained at the previous level. The actual production in 2002 was 32,896 ODP tons, which was verified by World Bank verification team in January 2003 (Annex 1, Table 1.6).

7. Under the 2003 Annual Program, the production target of CFCs was reduced from 32,900 ODP tons to 30,000 ODP tons. Two kinds of contracts were signed in Dec.2002. Two producers signed closure contracts with SEPA (including one who closed down two CFC-12 production lines; the enterprise continuing operation of its CFC-13 production line with an adjusted production quota consistent with the CFC-13 phaseout requirements), enabling a total reduction in production capacity of 6,000 MT (Annex1, Table 1.7). Four producers except one being retained at the previous level signed quota reduction contracts (Annex1, Table 1.8). Six producers remaining in production in 2003.

8. Under the 2004 Annual Program, the phaseout target of CFCs in China is 4,700 ODP tons from 30,000 to 25,300 ODP tons. Because there was no producer willing to close production line, the target was realized by administrative measure, that is, the six remaining producers reduce their quotas with equivalent proportion in the light of the "Circular on Implementing the Quota System for CFC Production" issued by SEPA and the former State Administration of Petroleum and Chemical Industry (SAPCI) (Annex1, Table 1.9).

9. As indicated above, the implementation of annual programs has been audited every year by the China National Audit Office.

10. All the closed production lines for all the years (1999 to 2004) have also been visited by a World Bank verification team as part of the verification of the annual programs, confirming that they are no longer capable of producing CFCs and their key production equipment has been fully dismantled and destroyed. The World Bank verification team has also analyzed and verified the production data recorded at each enterprise. The verification team has confirmed that the production in 2003 was within the ceiling established under the Agreement.

11. It is planned that the World Bank verification of the 2004 CFC production under the 2004 annual Program (plant visit) will be conducted in the second half of January of 2005 immediately before the Chinese new year festival (starting February 8, 2005) to enable a report to the first ExCom meeting in 2005.

Implementation of Policy Instruments

12. *Key instruments.* The key policy instrument of the program is the regulation promulgated for the introduction and implementation of an annual tradable quota system, entitled "Circular on Implementing the Quota System for CFC Production", by the State Environmental Protection Administration (SEPA) and SAPCI on May 31, 1999. A bidding system, where the government would buy back production quotas at lowest costs, was also introduced together with the promulgation of the tradable production quota system and auction system in which the exceeding quotas reduced by closing plant will be auctioned to remaining producers and this part quotas should by phased out at first in the next annual year. Under this regulation, some CFC producers were awarded grants through bidding in 1999 and 2000 to close their production, while a national CFC production quota within the annual target was issued to the remaining CFC producers in order to ensure that the demand for CFC was met and the national production for the year did not exceed the agreed target. Administrative measures have been used to meet the agreed target in 2002 and 2003. CFC production quotas with the remaining 7 producers were reduced in 2002. In 2003, CFC production quotas totaling 29,998 ODP tons were provided to 6 CFC producers, while two CFC producers dismantled their CFC-12 production lines, one of this two being closed completely, the other remaining one CFC-13 line. Under the 2004 annual program, 25,298 ODP tons CFC production quotas were issued to enterprises on Feb. 26, 2004, the phaseout target of 4,700 ODP tons realized by administrative measure.

13. Due to the remaining demand for CFC in China and the potential risk of illegal production, China introduced site supervision arrangements on December 17, 2001 through a "Regulation on Implementing Site Supervision to CFCs Production Enterprises" with the aim of strengthen the monitoring of CFC production. From January 1, 2002, the four remaining CFC-11 and CFC-12 producers have been placed under year-round site supervision by supervisors designated by SEPA. These supervisors are technical professionals located on site at production plants, and are from other CFC-11 and CFC-12 producing plants. This effectively enables the CFCs industry to help to monitor itself. The experience so far proves that it is an effective method to strictly control that CFC-11 and CFC-12 production does not exceed the CFC production quotas issued by SEPA. In 2003, there are 8 supervisors designated to the 4 CFC-11 and CFC-12 producers. No supervisors are designated to the other two producers, of which one is the only producer of CFC-13 in China and the other produces only CFC-114 and CFC-115. In 2004, this system is adopted permanently with the aim to continue implementing it in the following years. Most of supervisors are those who have been engaged in this work for the past two years.

14. *Other instruments related to trade in CFCs*. A study on options for export/import management for Halons and CFCs, which would help China to monitor and control export/import in CFCs and prevent illegal CFC trade, was completed in July 1999. A "Circular on Control Mechanism of Import and Export of ODS" and a "Circular on Strengthening Management of ODS Import and Export" were promulgated on December 3, 1999 and in April 2000. The mechanism is implemented by the Management Office of ODS Import-Export Control jointly administered by SEPA, the General Administration of Customs (GAC), and, Ministry of Commerce of the PRC (MOC) and helps China to monitor trade in ODS and eliminate illegal ODS trade. Two batches of *Export/Import Control List of ODS in China* have been promulgated in January 2000 and January 2001 respectively. Imports of Carbon Tetrachloride, a key feedstock for CFC production and also a controlled substance under the Protocol, were banned on April 1, 2000, imports and exports CFC-

113 used as solvent were banned on Feb.1, 2001, and imports and exports of other CFCs are regulated by a permit system administered by MOC (Ministry of Commerce).On July 8, 2003, in order to control the consumption of CFC-113, SEPA issued "Circular on issuing consumption license of CFC-113、TCA and CTC".

Technical Assistance Activities

15. Technical assistance activities are essential for successful implementation of the CFC production phase-out. Thirty-nine technical assistance activities have so far been planned under the annual programs, of which thirty were taken up for implementation. Twenty-two TAs have been completed, and eight are still under implementation. Four TAs, (one in each annual program), for the recruitment of international consultants were not activated. Eight TAs were cancelled as they were found to duplicate other activities, or were not considered feasible at that point of time. Details are provided in Annex 3.

16. The status of the 2004 technical assistance activities is as follows:

(a) Training of Personnel Involved in Implementation of Phaseout Activities. In order to implement the phaseout plan effectively, it is necessary to train staff in CFC production enterprises and audit agencies. The TOR was prepared and sent to the World Bank for Bank's Clearance on June 9, 2004 and the Bank gave its clearance on June 19, 2004.

(b) Site Supervision for CFCs Production Enterprises. Since the implementation of the Site Supervision in 2002 proved that it is effective, this activity is continually carried out this year for the purpose of strengthening the supervision of CFC production. From Jan. 1, 2004, main 4 of the 6 remaining CFCs producers have been placed under year-round site supervision by supervisors designated by SEPA. The TOR was submitted to the World Bank for clearance and was cleared by Bank on June 19, 2004.

(c) Performance Audit for 2003. As required in Schedule 3, Section A, Paragraph 6 (b) of the ODS IV Grant Agreement between China and the World Bank, an audit has been undertaken in April 2004 to audit the implementation status of 2003 Annual Program under the CFC production Sector. Total funding available in year 2003 was US$13 million. The audit aimed to verify all Annual Program activities, with particular emphasis on the actual CFC production in China for the year 2003. The auditors have visited all CFC plants that were in production in 2003, regardless of their production volume, all plants that were closed in 2003 under the Annual program and all Consultants who carried out the TA projects in 2003 and previous years annual programs under which the contracts have been signed.

(d) 2004 International Symposium of ODS substitute technologies. The symposium were held in connection with the Ozone Day 2004 celebration in Xian on September 17, 2004; reinforcing the communication of ODS substitute technology between China and the world and sharing the experience with ODS substitute technologies development and applications in developed countries.

Other activities (former Special initiatives)

17. Under the provisions of maximum flexibility in section (d) of the Agreement for the China Production Sector, China has undertaken the following other activities (See Annex 4).

18. ***Establishment of HFC-134a Production facility.*** As the phaseout of ODS production proceeds, the demand for substitutes in the consumption sector has increased rapidly. The impact of the first three years of implementation of the CFC sector plan equals a phaseout of more than 14,155 ODP tons of CFCs. The phaseout of CFC-11, which is the major foaming agent, has had an impact in the foam sector, and there is an urgent need to move into production of substitutes such as Cyclopentane and HCFC-141b. The use of CFC-12 as refrigerant in air-conditioners installed in all newly produced cars has been banned from January 1, 2002. It is estimated that the demand for HFC-134a, presently the only substitute of CFC-12 in the MAC sector in China, will exceed 7,500 tons in 2005 in this sector alone, and could reach 19,000 tons by 2010. China therefore envisages an urgent need to initiate other activities to produce such substitutes to ensure that there is no shortfall in their supply. Xi'an Jinzhu Jindai Chemical Industry Co., Ltd. was selected as the beneficiary for this project in December 2000. A two phase approach was selected with a final annual capacity of 10,000 Tons and a first stage capacity of 5,000 tpa.

19. The first stage of the project has physically been completed by the end of 2003 and total 1,800 MT of HFC-134a were produced from Jan. to August 2004. On Jun. 5, 2004, SEPA organized an expert group, including relevant officials from state administrative departments and experts from industry associations, to review the implementation of the project and commission it. Based on the analysis on the status of domestic HFC-134a production and the market demands, SEPA decided to finance the second phase increasing the production capacity from 5,000 tpa to 10,000 tpa of HFC-134a using the funds of CFC Production Sector Plan. The second phase construction contract with Xi'an Jinzhu is under preparation.

20. ***Screening of alternatives to Methyl Bromide in soil fumigation in China.*** The Institute of Plant Protection, Chinese Academy of Agricultural Sciences, was selected as the beneficiary for this project in April 2002. The purpose of this project is to screen out one or two economical, effective and simple alternatives for each crop tested, to confirm their acceptance by Chinese farmers and to provide references for policy-makers. Five sites were defined for testing of tobacco, strawberry, tomato, cucumber and hot pepper. This project has been completed, the final report has been submitted to WB during it's April mission in 2004.

21. ***China Country Compliance Center Activities.*** A new program is being introduced by China in 2003 with implementation to begin as soon as the legal arrangements can be made operational. As China approaches the second major obligation milestone under the Montreal Protocol in 2005, it is foreseen that the drastic required reductions in production and consumption of ODS will require rigorous compliance and enforcement measures, especially to prevent illegal activity in this regard. China therefore proposes to establish the Country Compliance Center (CCC) in 2003. The CCC will be the central management unit for the ODS program when it is established, and will be responsible for all management and enforcement activities under the Program. The CCC will be located in a new building which will be procured for the purpose and will house the CCC. The CCC, including purchase of the building, will be partially supported with MLF funding available from the CFC Production Sector Plan, by using of some of the unallocated balances from previous years' annual programs and also partially supported by bilateral

contributions to China. Based on the Executive Committee approval of the 2004 annual program, **p**rocedure was agreed between WB and SEPA in February 2004.

Plants producing HCFC-22 in China

23. As required by the agreement on the production sector, China has provided an updated list of the plants producing HCFC-22 in China, attached in Annex 2, and assures that no one produces CFCs on which China has obligation in the agreement.

PART B

2005 ANNUAL PROGRAM

1. *Phaseout Objectives* The phaseout objective of the 2005 Annual Program is to ensure that CFC production in the year does not exceed 18,750 ODP tons. China is requesting the release of the **seventh annual tranche** of **US$13 million** as agreed in the overall CFC Production Sector Phaseout Plan to achieve this objective. It is envisaged that the US$13 million will be allocated for closing CFC production lines and/or reducing production levels in some CFC enterprises that received production quota in 2004, for Technical Assistance activities, and for other activities.

Program Activities during the Year

2. *Policy actions.* In 2005, the following policies and measures will continue to be implemented by the Government. These policies are considered necessary for the success of total CFC production phaseout in China.

(a) Tradable production quota system – The regulation has been under implementation since 1999, and will continue. Five years implementation experience of this system verified that it is the most important measure to effectively and successfully realize annual phaseout target.

(b) Export and import control mechanism – The Management Regulation on Export/Import Control of ODS, promulgated in December 1999 by SEPA in collaboration with Ministry of Foreign Trade and Economic Cooperation (MFTEC) (now Ministry of Commerce of the PRC---MOC) and General Administration of Customs (GAC), covers all ODS as well as related equipment and facilities that produce or consume ODS. ODS Export/Import quota and permit systems have been adopted, and all enterprises wishing to export or import ODS must hold both a quota issued by SEPA and MOC, as well as specific export/import permits. GAC supervises exports and imports of ODS. China has also promulgated the Export/Import Control List of ODS in China, the First Group in January 2000, and the Second Group in January 2001. Under this regulation, China has banned imports of CTC, import and export of CFC-113 used as solvent and introduced quota and permit requirements exports and imports of CFC-11, CFC-12, CFC-113 (not used as solvent), CFC-114, CFC-115 and CFC-13. During a World Bank workshop on implementation of national phase-out plans in the region, a mechanism for export/import cooperation helping the countries controlling import was agreed.

(c) Sales permit system – In order to prevent illegal transaction of CFCs, the Management Regulation on Sales Control of CFC-113 has been implemented for 2 years. Under this system, all producers and sellers of CFC-113 must hold CFC-113 selling permit license. Those violating the regulation will be given certain punishment.

3. *Enterprise activities*. Through a combination of bidding, allocation of production quota and administrative measures, plant would be granted funds for full or partial closure. All CFC reduction or closure contracts are expected to be signed by the end of November, but in any case will be signed no later than the end of 2004. Closure projects are expected to take effect from January 1, 2005 and are to be completed by the end of June 2005. Key equipment should be dismantled and

destroyed by the end of January 2005. And reduction contracts will be performed from Jan. 1, 2005 to Dec. 31, 2005 by carrying out production quota system.

4. *Technical assistance* (TA) activities. The following TA activities are proposed for 2005:

(a) *Training of personnel involved in implementation of phaseout activities.* To implement the phaseout plan effectively, it is necessary to train staff in CFC production enterprises and audit agencies. Training is also needed for enterprises to understand the closure regulations. Training in 2005 will consist of two workshops: one for CFC production enterprises and the other one for auditors.

(b) *Daily Site Supervision to CFCs Production Enterprises.* This TA will continue in 2005 and the following years. This activity was added to the program in 2002 for the purpose of strengthening the supervision of CFC production. From January 1, 2002 up to now mainly remaining CFCs producers had been placed under year-round site supervision by supervisors designated by SEPA. These supervisors were technical professionals located on site at production plants, and were from other CFCs producing plants; this effectively enabled the CFCs industry to help to monitor itself.

(c) *Performance Audit.* A performance audit is required under the CFC sector plan. A TOR for the 2004 performance audit will be agreed between the Bank and SEPA for this purpose by November 2004, and the audit is expected to be completed by June 30, 2005.

(d) In connection with the 2004 Annual Programme, the Secretariat of the MLF requested China to provide information on CFC-113a uses. China informed that CFC-113a is only used as for feedstock for CFC-114/115 and pesticide production. As per agreement between China and the MLF Secretariat, China will verify feedstock applications and report the feedstock uses to the Ozone Secretariat consistent with the Montreal Protocol Art. 7 reporting requirement and CFC-113a will not be included in the World Bank annual verification.

5. Other TA activities that are necessary for effective phaseout may be developed during the year. The above policy initiatives, enterprise-level and technical assistance activities are summarized in Table B.1 below.

Table B.1: 2005 Annual Program

CFC production phaseout targets						
	Funding (US$ mill.)	2004 Production Limit[1]	Phaseout in 2005	Allowed Production in 2005[2]	Performance Indicators	Key Dates
CFC (ODP tons)	13	25,300	6,550	18,750	1. Closures of some current producers and reduction in production in remaining producers 2. Implementation of TA activities to help phaseout. 3. Production level not to exceed 18,750 MT	1. Dec. 2004-June 2005 2. Jan. 2005-Dec. 2005 3. Dec.31, 2005
Policy Initiatives						
Initiatives	Funding	Performance Indicators				Key Dates
1. Administrative measures	Incl .in TA n.a. incl. in TA	1. Training remaining enterprises for closing in 2005 and sign closure or partial closure contracts with CFC production enterprises 2. Implement closure or partial closure contracts 3. Train enterprises for closing preparation for 2006 reduction target				1. Dec. 2004 2. Dec. 2004-June 2005 3. Sep. 2005
2.To issue tradable Production quota to CFC producers	n.a.	1. Establish 2005 annual CFC production quota 2. Issue annual production quota to CFC producers for 2005				1. Dec. 2004 2. Mar. 2005
3. Import/export trade management	n.a.	1. Implement the import/export trade management mechanism.				1. January 2005-December 2005
Enterprise activities						
	Funding (US$ million)	Existing enterprises	Enterprises at end of 2005	Performance Indicators		Key Dates
Closure of CFC11/12 production lines	13.00	6	t.b.d.	1. Training enterprises, selecting closing plants (if any) and signing contracts. 2. Facilities dismantled completed		1. Sept. – Dec. 2004 1. No later than June 2005

[1] Per Agreement

[2] Maximum production quota that can be allocated for calendar 2005.

Table B.1: 2005 Annual Program (continued)

(Amount in US$ million)

Technical assistance activities			
Activities	Funding [1/] (US$ Million)	Performance Indicators	Key Dates
1. Training of personnel involved in implementation of phaseout activities.	t.b.d	1. TOR to be agreed with the Bank 2. Training on supervision and evaluation of CFC production, management of CFC production quota system, and CFC Project Implementation Manual	2. June, 2005 3. Start in December 2005. Specific schedules to be detailed in TORs
2. Implementing Site Supervision to CFCs Production Enterprise	t.b.d	1. TOR to be agreed with World Bank 2. Implementation.	1. November, 2004 2. January 1-December 31, 2005.
3. 2004 Performance audit	t.b.d	1. TOR to be agreed with the Bank 2. Audit implementation. 3. Audit is completed.	1. November, 2004 2. April, 2005 3. By June 30, 2005
4. Others to be identified	t.b.d		
Subtotal	Funded by the previous year		
TOTAL for phaseout activities	**13.00**		

[1/] These are estimated costs. After bidding for TA contractors, these costs will be adjusted to reflect contractual amounts for each TA. All TA activities are expected to be completed on schedule.

Annex 1
Status of Plants Producing CFC in the 1999-2004 Annual Programs

Table 1.1: CFC plants closed as part of ExCom approval conditions - April and May 1999

Sl.	SRI No.	Enterprise Name	Capacity (MT/year)	CFC type	CFC Production (ODP tons)	Status
					1999	
1	A3	Shangdong Dongyue Chemical Co. Ltd.	5,000	CFC-12	1042	Closure verified August 1999
2	C2	Hunan Yiyang Chlor-Alkali Chemical Co. Ltd.	1,000	CFC-12	0	Closure verified August 1999
3	C5	Inner Mongolia Baotou Chemical Plant #1.	700	CFC-12	0	Closure verified August 1999
4	C1	Jiansu Jianhu Phosphate Fertilizer Plant	500	CFC-12	0	Closure verified August 1999
5	B4	Sichuan Zigong Fujiang Chemical Plant	1,500	CFC-11	0	Closure verified August 1999
			1,000	CFC-12	0	
6	B9	Zhejiang Linhai Jianxin Chemical Plant	800	CFC-12	0	Closure verified August 1999
7	A14	Guangdong Huiyang Chemical Plant	1,000	CFC-11	0	Closure verified August 1999
			3,000	CFC-12	0	
8	A1	Henan Hebi Chemical Plant #1	1,500	CFC-12	0	Closure verified August 1999
9	C3	Hebei Longwei Fluorochemical Plant #1	1,080	CFC-12	0	Closure verified August 1999
10	C4	Guizhou Wuling Chemical Plant	1,500	CFC-12	0	Closure verified August 1999
			50	CFC-13	19	
11	A15	Guangdong Zhaoqing Chemical Plant	500	CFC-12	0	Closure verified August 1999
12	C6	Shanxi Shangzhou Chemical Plant	2,000	CFC-12	0	Closure verified August 1999
13	B10	Zhejiang Linhai Shuiyang Chemical Plant	500	CFC-12	0	Closure verified August 1999
14	A12	Shanghai Shuguang Chem. Plant	1,000	CFC-113	0	Closure verified August 1999
Subtotal			22,630		1061	

Table 1.2: Additional CFC plant closures in 1999 -contracts of April and May 1999

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)	Status
					1999	
15*	A2	Shangdong Jinan 3F Chemical Co. Ltd.	1,500	CFC-11	0	Closure verified August 1999
16	No SRI audit	Liaohe Chemical Group Chlor-Alkali Plant	1,000	CFC-12	0	Closure verified March 2000
17**	B15	Fujian Shaowu Floro-chem. Plant	1,500	CFC-11	0	Closure verified March 2000
Subtotal			4,000		0	

Table 1.3: CFC plants closed as part of 1999 Annual Program - contracts of June 1999

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)		Status
					1999	2000	
18	B2	Chongqing Tianyuan Chemical Plant.	500	CFC11/ 12	14	0	Closure verified January 2000
19	B5	Hubei Wuhan Changjiang Chemical Plant	1,500	CFC-11	0	0	Closure verified January 2000
			4,500	CFC-12	0	0	
20	A5	Jiangsu Wuxian Juxing Chemical Plant	2,000	CFC-11	0	0	Closure verified January 2000
21	A6	Jiangsu Wuxian Union (City Link) Chemical Plant	1,800	CFC-11	0	0	Closure verified January 2000
22	B1	Jiangxi De'an Refrigeration Plant	3,000	CFC-12	0	0	Closure verified January 2000
15*	A2	Shangdong Jinan 3F Chemical Co. Ltd.	3,500	CFC-12	0	0	Closure verified January 2000
23	B6	Shanghai Chlor-Alkali Chemical Plant Co. Ltd.	7,000	CFC-12	687	0	Closure verified January 2000
Subtotal			23,800		701	0	

Table 1.4: CFC plant closed as part of 2000 Annual Program - contracts of December 1999

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)		Status
					1999	2000	
24	A9	Jiangsu Wuxi Hushan Refrigeration Plant	4,000	CFC-11	560	0	Closure verified September 2000
25	B3	Sichuan Zigong Refrigerant Plant	1,500	CFC-11	198	0	Closure verified September 2000
			1,500	CFC-12		0	
26	B13	Zhejiang Lanxi Refrigeration Plant	2,500	CFC-11	785	0	Closure verified September 2000
27	B7	Zhejiang Rui'an Haitian Chem. Co. Ltd.	5,000	CFC-11	617	0	Closure verified September 2000
28	A4	Shandong Xuecheng Xinxing Chemical Plant	1,000	CFC-12	0	0	Closure verified September 2000
Subtotal			15,500		2160	0	

Table 1.5: CFC plants closed as part of 2001 Annual Program – contracts of November 2000

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)			Status
					1999	2000	2001	
17**	B15	Fujian Shaowu Floro-chem. Plant	3,500	CFC-12	979	1,159	0	Closure verified June 2001
29	A7	Suzhou Xinye Chemical Co. Ltd.	3,000	CFC-11	7408	2,532	0	Closure verified June 2001
30	A11	Jiangsu Changsu Yudong Chem. Plant	1,000	CFC-113	545	545	0	Closure verified June 2001
Subtotal			7,500		8932	4236	0	

Table 1.6: CFC plants reducing production as part of 2002 Annual Program – contracts of December 2001

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)				Status
					1999	2000	2001	2002	
31	A8	Jiangsu Meilan Electric Chem. Plant	3,000	CFC-11	1766	1,050	1,050	1,050	Data verified in February 2003
			3,000	CFC-12	1866	1,793	1,793	1,315	
32	B14	Zhejiang Juhua Florochem. Com. Ltd.	4,000	CFC-11	3376	4,339	4,827	4,489	Data verified in February 2003
			8,000	CFC-12	6325	7,759	7,706	7,157	
33	A10	Jiangsu Changsu Refrig. Plant (Changsu 3F)	10,000	CFC-11	7960	8,192	8,222	10,232	Data verified in February 2003
			5,000	CFC-12	2780	5,019	5,075	3,035	
			4,000	CFC-113	2834	2,756	2,700	2,200	
			400	CFC-115	90	60	30	60	
34***	B8	Zhejiang Linhai Limin Chem. Plant	50	CFC-13	27	27	27	27	Data verified in February 2003
35	B12	Zhejiang Dongyang Chem. Plant	5,000	CFC-12	2053	2,219	2,219	1,741	Data verified in February 2003
36	A13	Guangdong Xiangsheng Chem. Co. Ltd.	3,000	CFC-12	1,601	1,098	1,099	621	Data verified in February 2003
Subtotal			45,450		30678	34312	34748	31927	

Table 1.7: CFC plants closed as part of 2003 Annual Program – contracts of December 2002

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)					Status
					1999	2000	2001	2002	2003	
34	B8	Zhejiang Linhai Limin Chem. Plant	3,000	CFC-12	1,188	1,365	1,365	887	0	Closure verified January 2003
36	A13	Guangdong Xiangsheng Chem. Co. Ltd.	3,000	CFC-12	1,601	1,098	1,099	621	0	Closure verified January 2003
Subtotal			6,000		2789	2463	2464	1508	0	

Table 1.8: CFC plants reducing production as part of 2003 Annual Program – contracts of December 2002

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)					Status
					1999	2000	2001	2002	2003	
31	A8	Jiangsu Meilan Electric Chem. Plant	3,000	CFC-11	1766	1,050	1,050	1,050	997	Data verified in February 2004
			3,000	CFC-12	1866	1,793	1,793	1,315	1,066	
32	B14	Zhejiang Juhua Florochem. Com. Ltd.	4,000	CFC-11	3376	4,339	4,827	4,489	3947	Data verified in February 2004
			8,000	CFC-12	6325	7,759	7,706	7,157	7,406	
33	A10	Jiangsu Changsu Refrig. Plant (Changsu 3F)	10,000	CFC-11	7960	8,192	8,222	10,232	8884	Data verified in February 2004
			5,000	CFC-12	2780	5,019	5,075	3,035	4335	
			4,000	CFC-113	2834	2,756	2,700	2,200	1700	
			400	CFC-115	90	60	30	60	108	
35	B12	Zhejiang Dongyang Chem. Plant	5,000	CFC-12	2053	2,219	2,219	1,741	1,442	Data verified in February 2004
Subtotal			42,400		29050	33187	33622	31279	29885	

Table 1.9: Remaining CFC producers by January 2004 (Contracts of December 2003)

SI	SRI	Name of enterprise	Capacity (MT/year)	CFC type	CFC Production (ODP tons)						Status
					1999	2000	2001	2002	2003	2004	
31	A8	Jiangsu Meilan Electric Chem. Plant	3,000	CFC-11	1,766	1,050	1,050	1,050	997	338	Data not verified for 2004 (first half year

			3,000	CFC-12	1,866	1,793	1,793	1,315	1,066	467	reported)
32	B14	Zhejiang Juhua Florochem. Com. Ltd.	4,000	CFC-11	3,376	4,339	4,827	4,489	3947	1,966	Data not verified for 2004 (first half year reported)
			8,000	CFC-12	6,325	7,759	7,706	7,157	7,406	3,437	
33	A10	Jiangsu Changsu Refrig. Plant (Changsu 3F)	10,000	CFC-11	7,960	8,192	8,222	10,232	8884	4,749	Data not verified for 2004 (first half year reported)
			5,000	CFC-12	2,780	5,019	5,075	3,035	4335	3,250	
			4,000	CFC-113	2,834	2,756	2,700	2,200	1700	1,099	
			400	CFC-115	90	60	30	60	108	55	
34**	B8	Zhejiang Linhai Limin Chem. Plant	50	CFC-13	27	27	27	27	21	15	Data not verified for 2004 (first half year reported)
35	B12	Zhejiang Dongyang Chem. Plant	5,000	CFC-12	2,053	2,219	2,219	1,741	1,442	597	Data not verified for 2004 (first half year reported)
37	B11	Zhejiang Chemical Research Institute	100	CFC-114	0	7	7	29	0	0	Data not verified for 2004 (first half year reported)
			100	CFC-115	72	72	76	54	79	64	
Subtotal			**42, 650**		**44,793**	**39,991**	**36,196**	**32,896**	**29,986**	**16,039**	

*: Separate lines closed at different times at this enterprise; it therefore appears twice in this table.
**: Separate lines closed at different times at this enterprise; it therefore appears twice in this table.
***: Separate lines closed at different times at this enterprise; it therefore appears twice in this table.

Annex 2

Updated List of HCFC-22 producing plants in China

Sl.	Name of Company
1.	Hunan Zhuzhou Chemical Corporation (Group) (Hunan Zhuzhou Chemical Group Co., Ltd.)
2.	Zhonghao New Chemical Materials Co., Ltd.
3.	ATOFINA (China) Investment CO., Ltd. [Jiangsu Changshu Elf Atochem 3F Co., Ltd. (ATOFINA-3F Fluoro-Chemical Changshu Co, Ltd.)]
4.	Jiangsu Meilan Electric Chemical Plant (Jiangsu Meilan Chemical Co., Ltd.)
5.	Liaoning Fuxin Fluoro-chemical Plant (Fuxin Fluoro-Chemical Co., Ltd.)
7.	Sichuan Chenguang Chemical Research Institute Plant No.2 (Zhonghao Chenguang Research Institute of Chemical Industry)
8.	Shandong Jinan 3F Chemical Co., Ltd. (Jinan 3F Fluoro-Chemical Co., Ltd.)
9.	Shandong Dongyue Chemical Co., Ltd.
10.	Sichuan Zigong Fujiang Chemical Plant
11.	Zhejiang Juhua Fluoro-chemical Co., Ltd.
12.	Zhejiang Dongyang Chemical Plant (Zhejiang Fluorescence Chemical Co., Ltd.)
13.	Zhejiang Linhai Limin Chemical Plant (Zhejiang Linghai Limin Chemical Co., Ltd.)
14.	Zhejiang Yingpeng Chemical Co., Ltd. (Yingpeng Chemical Co., Ltd.)
15.	Wuhan Changjiang Chemical Plant
16.	Zhejiang San Mei Chemical Co., Ltd.

Notes:

1. The enterprise names in the brackets are the current name of the enterprise (as established by CFC-01-TA-06, the 2001 TA on Verification of HCFC-22 Producers).
2. Three HCFC-22 plants have been deleted from the 2003 Annual Program list. The production line of Guangdong Huiyang Chemical Plant (Sl. No.1) has closed down and the falicities had been dismantled on June 16th, 2003; Shandong Fire Extinguishing Agent Plant Shouguang Division (The Fire Extinguishing Agent Factory Under Shandong Haihua Group Co., Ltd.) (Sl. No.12) completely dismantled its production line on Nov. 30, 2002, and (Sl. No.8) Sichuan Zigong Refrigeration Plant has closed down and had dismantled its production facilities in February 2003.
3. In 2004, the above table has three changes: (a) SI 3, name changed; (b) SI 6, Shanghai Chlor-Alkali Chemical Co. Ltd., its HCFC-22 production unit has been closed and dismantled. So, SI 6 was deleted from the table; (c) SI 16 is added into the table, a new HCFC-22 production facility has been built and has begin operation in June, 2004.

Annex 3

Technical Assistance Activities, 1999-2004

Table 3.1: Implementation of Technical Assistance Activities in the 1999 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-99-TA-01	Production of an ODS Phaseout Video	Promulgation and Education Center for Environmental Protection	July 12, 1999	December 1999.	**Completed.** An ODS Phaseout video was prepared and broadcast for public information during the 11th meeting of the Parties in Beijing in November 1999. The video, as well as six TV advertisements prepared under the activity, were broadcast on national TV to raise awareness of the general public and authorities in China concerning the necessity for ODS phaseout and the urgency of phaseout activities.
CFC-99-TA-02	Development of a Management Information System	Haitong Chuangye Company and Beifang Silu Information Tech. Company of Tsinghua University	September 13, 1999	December 1, 2000	**Completed.** An MIS was established to monitor and generate final production data and program progress reports
CFC-99-TA-03	Development of Substitute Strategy	Center of Environmental Science, Peking University and Zhejiang Chemical Research Institute	June 26, 2000	June 30, 2002	**Completed.** A report was finalized by the end of June 2002. The strategy provides very useful guidelines for developing and investing in ODS substitutes Copies of the strategy document will be distributed to relevant administrations and associations for reference and guidance.
CFC-99-TA-04	Formulation of Standards for Cyclopentane, HCFC 141b, and HFC 134a	Shanghai Institute of Organic Fluorine Materials	April 28, 2000	March 23, 2001	**Completed.** After preliminary sampling of HCFC-141b and HFC-134a, the preliminary content and standards parameters were confirmed with the Government's administrative unit for standards. The draft standards report was completed in June, 2001..The standards were issued by the Standardization Committee of the State Bureau of Quality Supervision, Quarantine and Inspection on Sep. 6, 2002 and have gone into force on Apr.1, 2003.
CFC-99-TA-05	Training of Personnel involved in	SEPA		May 16, 2000	**Completed.** Training was organized for local officials, CFC producers

	Phaseout Implementation Activities				and auditors.
CFC-99-TA-06	Supervision and Management of Export/Import of ODS				**Cancelled**. Objective covered through a similar TA project in the Halon Sector
CFC-99-TA-07	Studies on Market Prospects for Closure Enterprises	SEPA		October 9, 2000	**Completed.** Eight enterprises were funded for exploring alternative economic options to CFC production.
CFC-99-TA-08	National Workshop	SEPA		June 5, 2000	**Completed.** This workshop included introductions by domestic research institutes of research topics relating to nine categories of CFC substitutes, fine fluorine chemicals, electrical fluorinated chemicals, electronic pure chemical reagents, special fluorine-containing drugs and agrochemicals (herbicide, insecticide etc.), production of these chemicals, and their potential market prospects. Many sector plan enterprises attended.
CFC-99-TA-09	Bidding Evaluation for HFC-134a Feasibility Study	CNCCC	January 28, 2000	January 14, 2001	**Completed.** Four proposals for undertaking a feasibility study for the construction of a HFC 134a production facility were evaluated, and a contract was signed with the winner.
CFC-99-TA-10	Survey on the ODS Application as Chemical Process Agents in China	Beijing University of Chemical Technology	December 10, 1999	January 12, 2000	**Completed.** This project provided a Report of Preliminary Survey on the ODS Application as Chemical Process Agents in China, and was used as the basis for further preparations on the proposed preparation of the Process Agent Sector Phaseout Plan in China.
CFC-99-TA-11	Recruitment of international technical consultants				**Cancelled**. No technical consultants were recruited internationally for TA activities in the year.

Table 3.2: Implementation of Technical Assistance Activities in the 2000 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-00-TA-01	Formulation of Standards for HFC-152a, and Isobutane	Zhejiang Chemical Research Institute	June 15, 2001	July 2002	**Completed.** The project completion report, summary report and the final standards report were submitted in April 2003. The acceptance meeting was held on July 10, 2003. The standers report was submitted to the Standardization Committee of the State Bureau of Quality Supervision, Quarantine and Inspection in January 2003 waiting for approval.
CFC-00-TA-02	Studies of Market Prospects for Closure Enterprises	SEPA	March 3, 2001	December 31, 2001	**Completed.** Six enterprises were supported to find production alternatives under this program.
CFC-00-TA-03	Training of Personnel Involved in Implementation of Phaseout Activities	SEPA	N/A	March 11, 2001	**Completed.** Training was organized for Audit staff, CFC producers and auditors.
CFC-00-TA-04	Performance Audit for 1999	China National Accounts Office	May 10, 2000	June 30, 2000	**Completed.**
CFC-00-TA-05	Verification of HCFC-22 Producers	Chinese Industrial Association of Organo-Fluorine Silicone Materials	June 4, 2002	September 20, 2002	**Completed.** This project was commenced in 2001 AP, The final report has been submitted to SEPA in March, 2003. In Nov. 2003, the consultant submitted the revised final report to SEPA.
CFC-00-TA-06	Recruitment of international technical consultants				**Cancelled.** No technical consultants were recruited internationally for TA activities in the year.

Table 3.3: Implementation of Technical Assistance Activities in the 2001 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-01-TA-01	Feasibility study of industrialized technology for CTC conversion to chloro-hydrocarbons other than CTC				**Canceled:** The CFC team concluded after field visits and a workshop that the technology was still under development.

CFC-01-TA-02	Training of Personnel involved in Phaseout Impl. Activities	SEPA	N/A	March 19, 2002	**Completed.** Training was organized for Customs staff, CFC producers and auditors.
CFC-01-TA-03	Assessment and Risk Analysis of Implementing Montreal in china	Institute of Environmental Economics Renmin University of China	August 15, 2001	October 15, 2002	**Under implementation:** The report consists of 6 sub-reports and a general report. The final report is expected to be ready by August, 2004.
CFC-01-TA-04	Studies of Market Prospects for Closure Enterprises				**Canceled.** As two of the three enterprises being closed in the year had already been covered under the 2000 Annual program, the third enterprise reduced its production quota only and did therefore not require any support. None of the remaining plants were to close in 2002.
CFC-01-TA-05	Recruitment of international technical consultants				**Cancelled**. No technical consultants were recruited internationally for TA activities in the year.
CFC-01-TA-06	Significant New Alternative Processes (SNAP)				**Cancelled.** As it was found that more preparatory work was necessary, including identification of key experts, before taking it up. It will be brought up in a later annual program.

Table 3.4: Implementation of Technical Assistance Activities in the 2002 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-02-TA-01	Training of Personnel involved in Phaseout Impl. Activities	SEPA	N/A	March 19, 2002	**Completed.** Training was organized for Customs staff, CFC producers and auditors.
CFC-02-TA-02	Performance Audit for 2001	China National Accounts Office	March 2002	June 30, 2002	**Completed.**
CFC-02-TA-03	Study Tour on Methods of Controlling Smuggling of ODS	SEPA			**Under Prepation**
CFC-02-TA-04	Integration of ODS MIS into electric monitoring system at the border	SEPA	April 20,2004	May 31, 2005	**Ongoing.** Through biding procedure, the consultant has been selected in April 2004. It is under implementation now.

CFC-02-TA-05	Recruitment of international technical consultants				**Cancelled**. No technical consultants were recruited internationally for TA activities in the year.
CFC-02-TA-06	Site supervision for ODS Producing Enterprises	SEPA	Nov. 5, 2002	December 31, 2002	**Completed.** Submitted production data from Jan. to Dec. 2002 of enterprises. The communication meeting was held on Nov. 11 to 12, 2002.
CFC-02-TA-07	Investigation of CTC/TCA production status in China	SEPA	Sept.15, 2002	October 15, 2002	**Completed.** Submitted Report on CTC/TCA Production Survey.
CFC-02-TA-08	Study Tour of Performance Audit	The China National Accounting Office			**Completed.** The overseas training has been finished on July 24, 2003. The study report was submitted to SEPA at the end of October 2003.

Table 3.5: Implementation of Technical Assistance Activities in the 2003 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-03-TA-01	Training of Personnel involved in Phaseout Implementation Activities	SEPA			**Completed**. The Enterprises Workshop has been held in Dec. 2003 and the Auditors Workshop in April 2004.
CFC-03-TA-02	Site supervision for ODS Producing Enterprises	SEPA	Oct. 24, 2003	Dec. 31, 2003	**Completed.** Supervisors **s**ubmitted CFCs production data of enterprises from Jan. to Dec. 2003. The workshop was held in Sep. 2003..
CFC-03-TA-03	Policy training managed by UNEP.	UNEP		Early in 2006	**Ongoing.** 3 of the 15 workshop planned under the CFC sector was carried out in 2003, additional 4 will be carried out in 2004 and the rest in 2005.
CFC-03-TA-04	China Country Compliance Plan (CCCP)	SEPA			**Ongoing.**
CFC-03-TA-05	Performance Audit for 2002	China National Audit Office	March 2003	June 30, 2003	**Completed.**

Table 3.6: Implementation of Technical Assistance Activities in the 2004 Annual Program

Ref. No.	Name of TA Project	Implementing Agency	Contract Date	Completion Date Planed	Implementation status/Remarks
CFC-04-TA-01	Training of Personnel involved in Phaseout Implementation Activities	SEPA		March 31, 2005	TOR was cleared by the Bank on June 19, 2004. One workshop will be held in November 2004, and the other will be in March 2005.
CFC-04-TA-02	Site supervision for ODS Producing Enterprises	SEPA	August, 2004	Dec. 31, 2004	TOR was cleared by the Bank on June 19, 2004. Contracts have been signed in August 2004.
CFC-04-TA-03	Performance Audit for 2003	China National Accounts Office		June 30, 2004	**Completed.** The audit report has been submitted to World Bank in July 2004 reviewed and accepted by the Bank.
CFC-04-TA-04	2004 International Symposium of ODS substitute technologies	SEPA		September, 2004	**Completed**

Annex 4

Other Activities, 1999-2004

Other Activities	Name of the manufacturer	Project starting date	Implementation status	Planed completion date	Remarks
Establishment of HFC-134a Production facility	Xi'an Jinzhu Jindai Chemical Industry Co., Ltd.	January 2001	The first phase of the project was commissioned by SEPA on Jun. 5, 2004.	July 2003	First phase completed. The second phase is under preparation.
Screening of alternatives to Methyl Bromide in soil fumigation in China	Chinese Academy of Agricultural Sciences	April 2002	Commissioned in November 2003.	July 2003	Completed.
China Country Compliance Center Activities (CCC)					Under preparation.

Annex 5
Status of CFC producing plants under the CFC Sector Plan as of June 2004

SI	SRI	Name of enterprise	Status
8	A1	Henan Hebei Chemical Plant #1. 1 CFC-12 production line.	Closed and dismantled
15	A2	Shangdong Jinan 3F Chemical Co. Ltd. 1 CFC-11 production line and 1 CFC-12 production line	Closed and dismantled
1	A3	Shangdong Dongyue Chemical Co. Ltd. 1 CFC-12 line	Closed and dismantled
28	A4	Shandong Xuecheng Xinxing Chemical Plant 1 CFC-12 production line	Closed and dismantled
20	A5	Jiangsu Wuxian Juxing Chemical Plant 1 CFC-11 production line	Closed and dismantled
21	A6	Jiangsu Wuxian Union (City Link) Chemical Plant. 1 CFC-11 production line	Closed and dismantled
29	A7	Suzhou Xinye Chemical Co. Ltd. 2 CFC-11 production lines	Closed and dismantled
31	A8	Jiangsu Meilan Electric Chem. Plant 1 CFC-11 line and 1 CFC-12 line	**In production**
24	A9	Jiangsu Wuxi Hushan Refrigeration Plant 1 CFC-11 production line	Closed and dismantled
33	A10	Jiangsu Changshu Ref. Plant (Changshu 3F) 1 CFC-11 production line, 1 CFC-12 production line, 1 CFC-113 production line and 1 CFC-115 production line	**In production**
30	A11	Jiangsu Changsu Yudong Chem. Plant 2 CFC-113 production lines	Closed and dismantled
14	A12	Shanghai Shuguang Chem. Plant 2 CFC-113 production lines.	Closed and dismantled
26	A13	Guangdong Xiangsheng Chem. Co. Ltd. 1 CFC-12 production line	Closed and dismantled
7	A14	Guangdong Huiyang Chemical Plant 1 CFC-11 production line and 1 CFC-12 production line.	Closed and dismantled
11	A15	Guangdong Zhaoqing Chemical Plant. 1 CFC-12 production line.	Closed and dismantled
22	B1	Jiangxi De'an Refrigeration Plant 1 CFC-12 production line	Closed and dismantled
18	B2	Chongqing Tianyuan Chemical Plant. 1 CFC-11 production line, 1 CFC-12 production line	Closed and dismantled
25	B3	Sichuan Zigong Refrigerant Plant 1 CFC-11 production line, 1 CFC-12 production line	Closed and dismantled
5	B4	Sichuan Zigong Fujiang Chemical Plant 1 CFC-11 production line and 1 CFC-12 production line.	Closed and dismantled
19	B5	Hubei Wuhan Changjiang Chemical Plant 1 CFC-11 production line,1 CFC-12 production line	Closed and dismantled
23	B6	Shanghai Chlor-Alkali Chemical Plant Co. Ltd. 1 CFC-12 production line	Closed and dismantled

27	B7	Zhejiang Rui'an Haitian Chem. Co. Ltd. 1 CFC-11 production line	Closed and dismantled
34	B8	Zhejiang Linhai Limin Chem. Plant 1 CFC-13 production line	**In production**
		Zhejiang Linhai Limin Chem Plant 2 CFC-12 production lines	Closed and dismantled
6	B9	Zhejiang Linhai Jianxin Chemical Plant 1 CFC-12 production line.	Closed and dismantled
13	B10	Zhejiang Linhai Shuiyang Chemical Plant 1 CFC-12 production line.	Closed and dismantled
37	B11	Zhejiang Chemical Research Institute 1 production line to produce CFC-114 and CFC-115	**In production**
35	B12	Zhejiang Dongyang Chem. Plant 1 CFC-12 production line	**In production**
26	B13	Zhejiang Lanxi Refrigeration Plant 1 CFC-11 production line	Closed and dismantled
32	B14	Zhejiang Juhua Florochem. Com. Ltd. Produce CFC-11 and CFC-12 in 1 production line	**In production**
17	B15	Fujian Shaowu Flouro-Chemical Plant 1 CFC-11 production line and 1 CFC-12 production line	Closed and dismantled
4	C1	Jiansu Jianhu Phosphate Fertilizer Plant 1 CFC-12 production line.	Closed and dismantled
2	C2	Hunan Yiyang Chlor-Alkali Chemical Co. Ltd. 1 CFC 12 production line.	Closed and dismantled
9	C3	Hebei Longwei Fluorochemical Plant #1 2 CFC-12 production lines.	Closed and dismantled
10	C4	Guizhou Wuling Chemical Plant. 1 CFC-12 production line and 1 CFC-13 production line.	Closed and dismantled
3	C5	Inner Mongolia Baotou Chemical Plant #1. 1 CFC-12 production line.	Closed and dismantled
12	C6	Shanxi Shangzhou Chemical Plant 1 CFC-12 production line	Closed and dismantled
16	Not SRI	Liaohe Chemical Group Chlor-Alkali Plant. 1 CFC-12 production line.	Closed and dismantled.

THE HALON SECTOR

2005 ANNUAL PROGRAM

August 2004

Data Sheet

Country	China
Year of Plan	2005
# of years completed	7
# of years remaining under the plan	5
Ceiling of Halon 1211 and halon 1301 consumption of the 2004 Annual Program	Halon 1211: 1,890MT Halon 1301: 150MT
Ceiling of Halon 1211 and Halon 1301 consumption of 2005 Annual Program	Halon 1211: 1,890 MT Halon 1301: 150 MT
Ceiling of halon 1211 and halon 1301 production of 2004 Annual Program	Halon 1211: 1,990 MT Halon 1301: 600 MT
Ceiling of halon 1211 and halon 1301 Production of 2005 Annual Program	Halon 1211: 1,990 MT Halon 1301: 600 MT
Total MLF funding approved in principle (November 1998)	US$ 62 million
Total MLF funding released to the Bank by September 2004	$ 48 million
Funding requested for the 2005 Annual program	$ 1.8 million

National Implementing operating agency	State Environmental Protection Administration
International implementing agency	The World Bank

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The Halon Sector
2005 Annual Program

BACKGROUND

1. In accordance with the Executive Committee's approval of the Sector Plan for Halon Phaseout in China (UNEP/Ozl.Pro/ExCom/23/68), China is hereby requesting release of the eighth tranche of US$1.8 million for implementation of the year 2005 Annual Program. With this funding, China's halon 1211 production will be reduced to a maximum of 1,990 MT and its consumption to a maximum of 1,890 MT in 2005. The halon 1301 production will remain within the agreed maximum of 600 MT and, consumption will remain within the agreed maximum of 150 MT in 2005. Details of the annual program are in Part B.

2. After the approval of the China Halon Sector Strategy at the 23rd meeting of the ExCom and release of funds for the first (1998) Annual Program, China began implementation of the Halon Sector Strategy. Since the start of the program, China has developed supporting policies and regulations. From the initial number of 14 Halon plants, 12 halon 1211 production plants have been closed and dismantled completely, and production and capacity has been reduced at the 2 remaining halon 1211 production plants. Out of a total of 72 halon fire fighting extinguisher manufacturers originally identified as potential beneficiaries, 14 enterprises have signed contracts to close their extinguisher production, and 44 enterprises have signed contracts to convert their manufacturing lines for fire extinguishers from halon to non-ODS extinguishers. 52 of the 58 enterprises have completed their closure/conversions projects, and the rest are presently implementing their closure/conversions. Four additional equipment manufacturers were located and were found to be operating without valid licenses, and were shut down in 2001 by administrative measure without any funding. Out of a total of 22 originally identified halon fire fighting systems manufacturers, 13 enterprises have signed contracts to convert their manufacturing of halon fire extinguishing systems from halon to non-ODS extinguishing systems; 4 of these have been completed, and the rest are presently implementing their conversions. There are currently 14 remaining fire extinguisher manufacturing enterprises and 9 fire extinguishing system enterprises who have not been addressed by the program yet. A total of 45 technical assistance activities have been taken up, including activities for strengthening implementation capacity, and preparation of standards to ensure quality and reliability of halon substitute fire extinguishers and fire extinguishing systems. 28 out of these projects have been completed.

3. The national production level of halon 1211 allowed for 2004 is 1,990 MT. Compared to the actual production level of 11,644 MT in 1997(the baseline year), the total production reduction of halon 1211 by the end of 2003 will be at least 9,654 MT. The ceiling for halon 1301 production for 2004 is 600 MT, a reduction of 18 MT from 1997 levels. There was no halon 1301 production in 2003. Some of the existing stock of halon 1301 was used to cover international and domestic demand for halon 1301. A detailed implementation status is provided in Part A.

4. Despite the significantly higher costs of halon 1301 substitutes, the significant

reduction in demand for halon 1301 can be assigned to the availability of new substitutes now available in China. Some of the chemical producers have invested in the development of HFC-227ea production facilities and has now starting production and sale of HFC-227ea. The introduction of new, but more costly substitutes are supported by a number of TA activities.

5. As far as the other halons are concerned, halon 1202 is generated as a by-product during the production of halon 1211. According to information provided by the three largest halon 1211 producers, the amount of halon 1202 generated averages between 20 and 30 kg per ton of halon 1211 produced. This halon 1202 is neither vented, nor sold, but is recycled into halon 1211 production. A ban on sales of halon 1202 in the market has been promulgated by the Ministry of Public Security (MPS). China is confident that, based on its regulations and monitoring, there is no halon 1202 sold in the market. China has never produced halon 2402, and has never had plans to do so. In accordance with national regulations, a new halon 2402 production facility would require a new production license, and such a license can no longer be obtained because of a ban on setting up new halon production facilities or expanding existing halon production facilities.

6. These phaseout results have been achieved through close cooperation between the State Environmental Protection Administration (SEPA), the Ministry of Public Security (MPS), China National Chemical Construction Corporation (CNCCC) and the concerned enterprises. The experience from the implementation has confirmed the necessity of strong policy enforcement and monitoring of the halon phaseout program. Because of the number and geographical distribution of the enterprises involved, the success of the program depends to a large extent on the cooperation and support from provincial and local Environmental Protection Bureaus and Fire Fighting Bureaus. Training and public awareness therefore continue to be key elements in the halon sector plan implementation.

7. The rapid reduction of halon 1211 makes it imperative and important for fostering the supply of alternative fire extinguishing agents and fire fighting equipment in order to maintain the national fire protection and fire fighting capability. Special initiatives have been taken up to strengthen the supply of light-weight high pressure CO_2 cylinders, ABC powder, and vegetable protein foam. A halon bank is also being established. Details of these initiatives are provided in Part A.

8. The production and consumption of halons in China since the start of the halon sector plan is described in Table 1 below. Consumption in this table was determined in accordance with the ExCom approval conditions as total annual production plus imports, minus exports. As indicated above, China has reported that no other halons were produced in China, including halon 1202 and halon 2402. All production and consumption data (including 2003 production) has been verified by an annual international audit commissioned by the World Bank.

Table 1: Annual Production and Consumption of Halons under the Sector Plan

	Halon 1211				Halon 1301			
	Production		Consumption		Production		Consumption	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
1997 (baseline year)	9,950	11,644	NA	10,849	618	618	NA	NA
1998	7,960	7,842	7,160	7218	618	450	300	-152 [1/]
1999	5,970	5,965	5,370	5280	618	484	300	304
2000	3,980	3,978	3,580	3650 [2/]	618	428	300	377 [2/]
2001	3,317	3,117	3,117	2,832	618	213	300	180
2002	2,654	2,469	2,654	2,284	600	0	150	-36
2003	1,990	1,884	1,890	1,735	600	0	150	-26
2004	1,990		1,890		600		150	
2005	1,990		1,890		600		150	
2006	0	0	0		150		100	
2007	0	0	0		150		100	
2008	0	0	0		150		100	
2009	0	0	0		150		100	
2010	0	0	0		0			

[1/] The negative consumption of Halon 1301 in 1998 (–152 MT) reflects the export of 602 MT, which included part of the stock (328MT) from the previous year's production. Therefore, the total consumption in 1998 (Consumption=Production +Import - Export) is negative. Similar, the negative consumption in 2002 and 2003 reflect export of stocks at the producer produced before 2002.

[2/] Remedial action for the excess consumption in 2000 was taken by appropriately reducing consumption quota in 2001.

Part A

Implementation Status Of Previous Annual Programs

1998-2003 Annual Programs

1. ***Phaseout targets and objectives.*** As described in Table 1, production and consumption of halons has been reduced annually under the halon sector agreement. While production has consistently been retained below the agreement levels, the consumption of halons (production adjusted for net export) exceeded the targets twice (for 1998 and 2000) as exports of halons turned out to be lower than expected, and this was discovered only when the final export figure became available in the beginning of the following year. These developments were promptly reported to the ExCom, and corrective measures were taken as follows:

(a) reduction of excess consumption from the next year's consumption limit (for 2000);
(b) confiscation of excess production to not allow its consumption within the following year (described in detail in the 2001 annual program); and
(c) strengthening of the controls on the national consumption target from 2001 onwards by limiting the initial total national production quota to the consumption target for the year. Any additional production quota (for export) can only be requested retroactively, so that an enterprise requesting such additional quota would have to provide documentation to prove that the export has already taken place.

2. The consumption data for 2001, 2002 and 2003 confirms the effectiveness of this arrangement.

3. ***Implementation of policy instruments.*** The production quota regulations became effective in December, 1997. National annual halon production quotas are issued to individual producers for halon 1211 and halon 1301.

4. The quota system is the main tool for the implementing the halon phaseout and is supported and enforced fully by Ministry of Public Security (MPS). The production data reported by the producers is periodically verified by SEPA and MPS. MPS has simultaneously strengthened its enforcement of the regulation on use of halon 1211 fire extinguishers, which has further reduced the demand for halon 1211. As described above, the halon quotas are now administratively split up into production quotas for domestic consumption and for export. Utilization of the export component is allowed retroactively, and requires proof of export orders having been carried out. Licensing is another important control measure. Only licensed enterprises are allowed to produce and/or sell halon and/or halon containing products. After a halon closure/conversion project is completed, the enterprise's production license for halon and/or halon containing products is withdrawn by MPS.

5. There is also a ban on production and sale of halon and/or halon-containing products

to enterprises who have been funded and completed projects under previous annual programs. When the conversion is completed and the project is commissioned by MPS and SEPA, the license to produce and sell halon fire extinguishers and systems are withdrawn.

Other enterprise-level phaseout activities

6. ***Closure of halon production facilities.*** Full closure contracts were signed with bid winners in various annual programs. Their production facilities were dismantled and halon-producing equipment was completely dismantled and disposed. Partial closure contracts were also signed with some bid winners, and their production quota and, in some cases, capacity was reduced accordingly. Details by year are provided in Annex II.

7. ***Closure and conversion of halon fire extinguisher and fixed fire extinguishing system manufacturers.*** Likewise, contracts were signed under each annual program with extinguisher and system manufacturers for reducing halon 1211 consumption to match the declining supply of halons. Some extinguisher manufacturers selected closure and the other selected conversion. 52 of 58 closure and conversion activities have been completed on schedule and were commissioned by SEPA and MPS. The rest are presently implementing their closure/conversions. Details are provided in Annex III and IV.

Technical assistance (TA) aactivities

8. All activities under TA projects of 1998 and 1999 have been completed. Most of the TA activities in the following years have been completed and the rest are under implementation. Details of all these activities are in Annex V (A-F).

Special Initiatives

9. Another main objective of the Halon Sector Plan is to ensure that the level of fire protection capability in China is not compromised as a result of halon phaseout activities, and that adequate quantities of suitable quality substitutes are available. Special initiatives have been taken up under various annual programs to address this requirement. The special initiatives undertaken so far are summarized in Annex V and described below. In addition, fire equipment companies and chemical producers has at own costs introduced new halon alternatives and substitutes for both halon 1211 and halon 1301 which are now available in China.

10. ***ABC dry chemical powder.*** To maintain the required level of fire fighting capacity in China and promote the use of ABC powder, the Foshan Electro-chemical General Plant was selected to establish an ABC dry powder production line with an annual capacity of 3000 MT. The grant contract was signed in May 1999 and the project has been completed and commissioned in November 2001. Commercial production has already started and the production of ABC powder was 1544.75 MT in 2002 and 3013.9 MT in 2003.

11. ***Light weight high pressure CO_2 cylinders.*** Weifang Dongming Fire-fighting Equipment Co., Ltd was selected as the beneficiary for manufacture of light weight CO_2 cylinders with the capacity of 600,000 units per year. The contract was signed in November

2000. All the purchased equipment arrived the site by the end of 2003. All production equipment and trial production has been completed. Commercial production of CO2 cylinders started beginning of 2004.. The project will be commissioned by SEPA in October 2004.

12. ***Halon banking***. The Panyu Shengjie Fire-fighting Equipment Co., Ltd. was selected as the beneficiary to set up a halon bank in Guangdong with an annual recycling capacity as 500 MT. The grant contract was signed in August 2000. The equipment was delivered to the beneficiary in December 2001. The beneficiary finished equipment installation and commission in April 2003. The project has been completed & commissioned by SEPA in July 2004.

13. ***National conference.*** A national halon conference was held in November, 2000, and was attended by various institutions and entities related to halon phaseout activities . The conference provided a valuable opportunity to look back on experiences and lessons, look forward to future tasks, and to share the lessons of successful experience.
14.

15. ***Plant-protein based foam.*** Foam has been found to be an important substitute for halon 1211 manly in the oil industry and similar risks. Hence, halon 1211 replacements in this area at this stage is critical. With the environmental issues on AFFF, plant-protein based foam constitute an attractive alternative. The Honsen Fire-fighting Hi-tech company was selected as the beneficiary to establish a test laboratory for plant-protein-based foam. The contract was signed in August 31, 2000. The project has been completed in October 2002.

16. ***Development of 3,600 MT plant-protein foam fire fighting agent production line*** Langfang Yida Technology Co., Ltd. was selected as the beneficiary to set up the production line of 3,600 MT Honsen L119 plant-protein based foam in Langfang. The contract was signed in October 2003. While the overall designed plant capacity is larger (10,000 MT/year), the special initiative will only support this capacity within this limit in keeping with the requirement in the agreement between China and the Excom "China understands, consistent with Executive Committee rules, that it has a responsibility to ensure that it will not use Fund resources to build aggregate capacity for the production of substitute chemicals or substitute extinguishers that exceeds that capacity (for Halon 1211, 17,800 tonnes; for Halon 1301, 1000 tonnes; and for halon fire extinguisher production capacity of 7.71 million units." The company will cco-finnacing the project accordingly. The bids evaluation report for equipment procurement have been approved by SEPA in May 2004.

17. ***Operation of Guangdong Halon Recycling Center*** Guangdong halon recycling center located at Panyu in Guangdong province, has been established as a demonstration halon recycling center to collect, recycle and reclaim project. The project has been completed & commissioned in July 2004. A new contract will be signed between SEPA and Panyu Shengjie to start-up operation. The TOR for this new project is under preparation.

18. ***CO_2 and other clean agent extinguisher manufacturers survey*** A new special initiative project was added into the 2003 annual program conduction a survey on CO2

extinguisher, clean fire extinguishing agents and foams presently used in China and internationally as replacement for halon 1211.

The implementation status of the special initiative projects are summarized in Annex VI.

2004 Annual Program

19. ***Phaseout targets and objectives.*** The phaseout target is (see Annex I) to reduce halon 1211 production to a maximum of 1,990 MT; to reduce halon 1211 consumption to a maximum of 1,890 MT; to maintain halon 1301 production to a maximum of 600 MT; and halon 1301 consumption to a maximum of 150 MT. Production quotas have been issued consistent with these ceilings.

20. ***Implementation of policy instruments.*** The quota system continued to be the main tool for the implementing the halon phaseout and is supported fully by MPS. A catalogue of ban on production and sale for the phased out products including halon extinguishers and agents was issued by SETC. The deadline for halon and halon extinguisher production is in line with the sector plan timetable. Like previous years, a ban on sales and production for the commissioned project enterprises was issued.

Enterprise-level phaseout activities

21. ***Closure of halon production.*** The national targets for halon production level in 2004 are the same as that in 2003. As there was no additional production reductions in 2004, quotas were issued at the same level as in 2003 and no new contract was signed with the remaining two halon 1211 producers the one 1301 producer.

22. ***Closure & conversion of halon fire extinguisher manufacturers.*** China has conducted an assessment of the number of contracts that have already been signed in the first three years for closure and conversion of equipment manufacturers to review whether the pace of conversion is appropriate, given the projected availability of halon 1211 in the next three years. This assessment has now been concluded. There are total of up to 14 enterprises remaining in halon sector, of which some might hav closed down, merged or change locations and or names. MPS is presently investigation to ensure that all remaining extinguisher producers are addressed. It is expected that the investigation will be finished allowing contracts to be signed with all remaining manufacturers by the end of 2004.

23. ***Closure & conversion of halon fire fixed halon fire extinguisher system manufacturers.*** China has conducted a survey on the halon consumption amount of all the remaining 18 fire system manufacturers. There are total up to 9 enterprises remaining. All the remaining contracts will be signed by the end of 2004.

Special initiatives

24. ***Establishment of a national trade standard of hexafluorapane extinguishing agent and its testing methodology.*** This project aims to establish a national standard of the HFC-236fa extinguishing agents and establish testing method of HFC-236fa extinguishing agents. The TOR of the project has been agreed by the World Bank. Now the bidding procedure is ongoing to select the consultant who will carry out the implementation of the project.

25. ***Development of Hexafluoropropane Fire Extingushers*** As production of new halon 1211 fire extinguisher will be phaseout soon, new clean gas fire extinguishers

demand are increasing and national standards for China is needed. Hexafluoropropane is a halon 1211 substitute, it has a good fire extinguishing performance, its ODP is 0 and it is already marketed internationally by abroad companies,. This project aims to develop a portable hexafluoropropane fire extinguishers as one of halon substitutes and to give out the parameter of the extinguisher which are necessary in the process of converting technology to products, such as the kind and mass or pressure of propellant, fill density, designing data of the cylinder, operating temperature rages, effective discharge time, bulk range and class of fire.

26. ***Use of clean agent fire extinguishers.*** As halon 1211 production is no nearing its final stage, strengthening of enforcement of halon 1211 phaseout policies and alternatives for non-essential uses and supporting activities might be considered. The initiative might include additional support to producers of clean agents producers and extinguisher manufacturers to ensure availability of products and correct application and use.

The implementation status of 2004 special initiative projects is summarized in Annex VI.

Technical assistance activities

Two TA projects were identified for the 2004 annual program, including training and auditing, and are at various stages of implementation. Another two TA projects, which were originally proposed in Halon 2000 annual program, are covered under the 2004 annual program. The funding support for these two additional TA projects are still come from the 2000 annual program. Details are in Annex IV(G).

PART B
2005 ANNUAL PROGRAM

Objectives

1. The phaseout target for the 2005 annual program is to (a) maintain halon 1211 production at a maximum of 1,990 MT and consumption to a maximum of 1,890 MT and, (b) to maintain halon 1301 production at a maximum of 600 MT, with consumption being maintained at a maximum of 150 MT. The 2005 program will also continue actions to ensure that the fire fighting capacity is not undermined as the result of an insufficient supply of substitutes of satisfactory quality.

2. China is requesting the release of the approved amount of US$ 1.8 million for the 2005 annual program as agreed in the overall Halon Sector Phaseout Plan. To achieve these goals, the following activity is envisioned:

a. US$ 1.8 million to be used for technical assistance activities in order to support the halon phaseout program and ensure that existing fire protection requirements can be met.

Policy instruments during the Year

3. ***Policies to be continued.*** In 2005, the following policies and measures will continue to be implemented by the Government. These policies are considered necessary for the success of a total halon phaseout in China.

a. Bidding -- The bidding system will continue to be improved based on the experiences gained from the 1998, to 2004 annual programs.
b. Tradable production quota – The regulation will continue to be implemented.
c. The ban on new installations of halon extinguishers for non-essential uses and a gradual tightening of the definition of essential uses will continue.

4. In order to support local enforcement of the ban on non-essential uses of halons in the most effective manner, the Government will ensure that:

a. SEPA/MPS will disseminate details of the ban to all prospective consumers through various channels (news media, bulletins, propaganda, etc.);
b. Local fire bureaus and environmental protection bureaus will jointly inspect consumers on a regular basis. If any consumer is found to be using the newly-installed halon fire extinguishers in non-essential areas, the consumer will be required to change to non-halon systems within a defined time.
c. Joint inspection teams of the local fire bureaus and environmental protection bureaus will be required to submit regular reports to MPS and SEPA about the situation and measures in implementation of the ban.
d. Stricter control the sales of halon will be enforced by making use of the output of projects for four demonstration centers and replicating the experience to other provinces in order to reach phaseout goals.

5. As usual MPS will withdraw production licenses for manufacturing halon and halon-containing products from beneficiaries after their projects are completed.

Enterprise-level activities

6. Through a combination of production quotas, bidding systems and administrative measures, enterprises will be granted funds for closure and conversion activities.

Technical assistance (TA) activities

7. ***Verification of the actual production of CO2 and clean agent extinguisher as per the agreement between The Executive Committee of the multilateral fund and China.*** Since the production of CO_2 extinguishers and other clean agent fire extinguishers under the program is one of the performance indicators for the implementation of the Halon Sector Plan. China will start preparation of the survey for of CO_2 extinguisher in 2005 consistent with the requirement. The work is planned to be completed in the first half of 2006 to be submitted together with the 2007 annual program in August 2006.

8. ***Research on Assessing Halons' Essential usages*** There are fire/explosion risk scenarios for which current fire protection technology cannot provide adequate protection without the use of halon, in such case, halon is essential. Although the use of halon is desirable in a wide range of facilities, the importance of protecting the ozone layer is critical. It is necessary to establish a proper approval procedure and certain criteria in assessing an essential use for the purpose of control halon application.

9. ***Establishment the Monitoring & Management Mechanism of Guangdong Halon Recycling Center.*** Guangdong Halon Recycling Center has been established and will start to operate soon. To work out the monitoring & management mechanism for halon recycling is crucial for ensuring halon recycling center proper running. Some of the issues would be supply of halon extinguishers cylinders and other components while manufacturing of halon fire extinguisher production is phaseout. Monitoring of sale of extinguishers with recycled halon to essential users is another issue to be addressed under this activity.

10. ***Training of Personnel Involved in Phaseout Activities*** As in the previous year, it is considered necessary to train staff of local environmental protection bureaus, local fire fighting bureaus and halon enterprises in order to implement the phaseout plan effectively. Training is needed to prepare enterprises to bid in the following year, to supervise halon production and consumption, to manage the tradable production quota system and to learn operation procedures in the halon sector phaseout approach. In addition, as the sector approach requires financial and performance audits, training has to be provided for audit agencies on the sector approach and the annual plan.

11. ***Survey on producers of Halon 1301 extinguishing system*** Since halon 1301 system will to be phased out after 2005, to make a survey on the halon 1301 consumption data of each system enterprise.

12. ***Performance Audit for 2004 Annual Program enterprises.*** As in previous years, CNAO will conduct a performance audit for sector plan activities in 2004 to ensure the effective implementation of the annual program.

Table BI. 2005 Annual Program

Halon phaseout targets & policy instruments				
	Start of program (MT)	End of program (MT)	Key Actions Required	Key Dates
Halon 1211 Production ceiling	1,990	1,990	1.Production quotas and TA activities to support introduction of substitutes and alternatives to help phaseout	1. Jan-Dec. 2005
O/w export		100		
Consumption ceiling	1,890	1,890	1. Financial support for introduction of substitutes and alternatives 2. TA activities	1. Jan-Dec. 2005
Halon 1301 Production ceiling	600	600	1.Production quota and TA activities to support introduction of substitutes.	1. Jan-Dec. 2005
O/w export	450	450		
Consumption ceiling	150	150	1. Policy controls, 2.Financial assistance to fire system manufacturers and TA activities to support introduction of alternatives.	1. Jan-Dec. 2005

Continuation of policy instruments		
Policy Instruments	Actions Required	Key Dates
1. Bidding system for TA projects	1. To select the consultant through a bidding system.	Based on the timeschedule and progress of each TA
2. Tradable production quota for halon producers	1. Establish 2005 halon production quota ; 2. Issue 2005 production quota to halon producers	1. Dec. 2004 2. Early of 2005
3. The ban on halon extinguisher uses in non-essential areas	1. Promotional campaign on the ban, through various channels; 2. Joint supervision of ban by local Fire Fighting Bureaus and Envir. Protection Bureaus.	1. Through 2005 2. Through 2005

Table BI: 2005 Annual Program (Contd.)

Enterprise-level Activities						
	Funding Requested (US$ mill)	Existing Enterprises	# of enterprise targeted	# of enterprises at end of 2005	Key Actions Required	Key Dates
1. Reduction of halon 1211 production	0	2	0	2	Issue the production quota to these two enterprises.	1. At beginning of 2005
2. Closure & conversion	0	0	0	0		

of halon extinguisher manufacturer						
3. Conversion of halon 1211 fire extinguishing system manufacturers	0	0	0	0		
Subtotal	**0**					

Table BII: 2005 Annual Program-Technical Assistance Activities

TECHNICAL ASSISTANCE ACTIVITIES				
Activities		MLF funding requested (US$ million)	Actions Required	Key Dates
HAL-05-TA-01	CO2 and Clean agent Extinguisher under the halon sector plan	t.b.d	Selection of qualified institutions	1. Contract to be signed no later than the end of 2005. 2. Completed the project before April 1, 2006
HAL-05-TA-02	Research on Assessing Halons' Essential usages	t.b.d	Selection of qualified institutions	1. Contract signed no later than the end of 2005. 2.Finish work within 24 months after signing contract
HAL-05-TA-03	Research on the Management Mechanism of Guangdong Halon Recycling Center	t.b.d	Selection of qualified institutions	1. Contract signed no later than the end of 2005. 2.Finish work within 24 months after signing contract
HAL-05-TA-04	Survey on producers of Halon 1301 extinguishing system.	t.b.d	SEPA	Survey will be carried out through the 2005
HAL-05-TA-05	Audit for 2004 Halon Sector Perforrmance	t.b.d	CNAO	1.Contract signed by March 2005. 2.Complete by end of June 2005
HAL-05-TA-06	Training	t.b.d	Training workshops will be carried out	Training will be carried out through the 2005.
Subtotal				
TOTAL for phaseout activities		**1.80**		

Table BIII: 2005 Annual Program - Proposed Performance Indicators

Halon Phaseout Targets			
Halon sector	Start of program (MT)	End of program (MT)	Performance Indicators
Halon 1211 Production ceiling	1,990	1,990	• Production levels (national aggregate halon 1211)
o.w. exports	0	100	
Consumption ceiling	1,890	1,890	• Consumption levels (national halon production plus import minus export)
Halon 1301 Production ceiling	600	600	• Production levels (national aggregate halon 1301 production)
o.w. exports	450	450	
Consumption ceiling	150	150	• Consumption levels (production plus imports minus exports)

Continuation of Policy Instruments	
Initiatives	Performance Indicators
Bidding system for TA projects	• All the contracts will be signed by end of 2005.
Tradable production quota for halon producers	• Annual production quota to halon producers for 2005 issued by March 30, 2005 • Production reports from enterprises received on quarterly basis
The ban on halon extinguisher uses in non-essential areas	• One raining workshops conducted throughout the year in key provinces

Enterprise-level activities				
Activities	Funding requested (US$ mill)	Existing Enterprises	# of enterprises at end of 2005	Performance Indicators
Reduced Halon 1211 production	0	2	2	
Closure & conversion of halon extinguisher manufacturer	0	0	0	
Conversion of halon 1211 fire extinguishing system manufacturers	0	0	0	
Subtotal	0			

Table BIII: 2005 Annual Program - Proposed Performance Indicators (Contd.)

Technical assistance activities		
Activities	Amount in US$ million	Performance Indicators
1. Verification of the Actual Production of CO2 Extinguisher of 2005	t.b.d	Complete by the end of 1st Quarter of 2006
2 *Research on Assessing Halons' Essential usages*	t.b.d	Invitation issued before Oct., 2005.
3.Research on the Management Mechanism of Guangdong Halon Recycling Center	t.b.d	Invitation issued before Oct., 2005.
5. Survey on producers of Halon 1301 extinguishing system	t.b.d	Completed by end of 2005
5. Audit for 2004 Halon Sector Performance	t.b.d	Complete by end of June 2005
6. Training	t.b.d	Training for auditors will be conducted in the first quarter of 2005
Subtotal		
TOTAL for Phaseout Activities	**$1.8million**	

ANNEX I: Halon Phaseout Action Plan, January 1, 1998 to January 1, 2010

CHINA															
Halon Sector Phaseout Action Plan, January 1,1998 to January 1,2010															
		First Stage			**Second Stage**					**Third Stage**					**Total Funding Request**
Year	Base line production	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Halon 1211 (MT)															
Production target	9,950	7,960	5,970	3,980	3,317	2,654	1,990	1,990	1,990	0	0	0	0	0	
o.w. Export		800	600	400	200	0	100	100	0	0	0	0	0	0	
Import		0	0	0	0	0	0	0	0	0	0	0	0	0	
Domestic Consumption		7,160	5,370	3,580	3,117	2,654	1,890	1,890	1,890	0	0	0	0	0	
Production phaseout target		1,990	1,990	1,990	663	663	664	0	0	1,990	0	0	0	0	
Consumption phaseout target		1,790	1,790	1790	463	463	764	0	0	1,990	0	0	0	0	
Halon 1301 (MT)															
Production target[3/]	618	618	618	618	618	600	600	600	600	150	150	150	150	0	
o.w. Export		318	318	318	318	450	450	450	450	50	50	50	50	0	
Import		0	0	0	0	0	0	0	0	0	0	0	0	0	
Domestic Consumption		300	300	300	300	150	150	150	150	100	100	100	100	0	
Production phaseout target		0	0	0	0	150	0	0	0	450	0	0	0	150	
Consumption phaseout target		0	0	0	0	150	0	0	0	50	0	0	0	100	
Required funding from MLF ($'000)		12400	9700	10600	4500	3700	5900	1200	1800	11400	400	300	100		62000

ANNEX II
Closures of halon production facilities and lines

A. 1998 Annual Program

Table 1: Closure of Halon 1211 Plants with 1998 Production Quotas

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1.Zhedong No.1 Chemical Plant	347	January 1, 1998	Project completed. Equipment dismantled completely	Plant closure
2.Zhejiang Dongyang No.2 Chemical Plant	1,004	January 1, 1998	Project completed Equipment dismantled completely	Plant closure
3.Zhejiang Xiaoshan Fire-fighting Chemical Plant	387	January 1, 1998	Project completed Equipment for one production plant dismantled completely	Partial closure. One out of two production plant closed.
4.Foshan Electro-Chemical General Plant	300	January 1, 1998	Project completed. Production within reduced production quota.	Partial closure. Reactor pipes dismantled.
Total (Quotas sold back to Gvt.):	**2,038**			

Table 2: Closure of Halon 1211 plants not assigned 1998 production quotas

Name of the plant	Halon phaseout (MT)	Year of stop production	Implementation status	Remarks
1. Dalian Fire-extinguishing Agent Plant	165.9	1997	Project completed and equipment dismantled completely	Dismantling and destruction of equipment verified
2. Zigong Fijian Chemical Plant	54.0	1997	Project completed and equipment dismantled completely	Dismantling and destruction of equipment verified
3. Guangdong Don guan Fire-fighting Equipment Plant	320.0	1997	Project completed and equipment dismantled completely	Dismantling and destruction of equipment verified
4. Guangxi Bihar Ocean Chemical Plant	40.0	1997	Project completed and equipment dismantled completely	Dismantling and destruction of equipment verified
5. Wenling Salt Farm Chemical Plant	70.5	1997	Project completed and equipment dismantled completely	Dismantling and destruction of equipment verified
Total	**650.4**			

B. 1999 Annual Program

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1. Hewing Xiaoshan Fire-fighting Chemical Plant	400	January 1, 1999	Project completed and equipment dismantled completely	Plant closure
2. Shandong Hahira Group Shogun Fire-fighting Chemical Plant	500	January 1, 1999	Project completed Reactor pipes dismantled	Partial closure.
3. Wuxian Chemical Plant	388	January 1, 1999	Project completed Reactor pipes dismantled	Partial closure.
4. Hewing Dongyang Chemical Plant	654	January 1, 1999	Project completed Reactor pipes dismantled	Partial closure.
Total (Quotas sold back to Gvt.)	**1,942**			

C. 2000 Annual Program

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1. Zhejiang Dongyang Chemical Plant	779	January 1, 2000	Production based on reduced production quota	Partial closure.
2.Shandong Hahira Group Shogun Fire-fighting Chemical Plant	451	January 1, 2000	Production based on reduced production quota	Partial closure.
3.Wuxian Chemical Plant	170	January 1, 2000	Production based on reduced production quota	Partial closure.
4. Zhejiang fire-fighting Chemical Plant	130	January 1, 2000	Producing basing on reduced quota	Partial closure.
5.Foshan electro-chem. general plant	381	January 1, 2000	Production based on reduced production quota	Partial closure.
6.Zhejiang chemical research institute	79	January 1, 2000	Production based on reduced production quota	Partial closure.
Total (Quotas sold back to Gvt.)	**1,990**			

D. 2001 Annual Program

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1.Wuxian Chemical Plant	330	January 1, 2001	Project completed and equipment dismantled completely	Plant closure.
2. Zhejiang fire-fighting Chemical Plant	250	January 1, 2001	Project completed and equipment dismantled completely	Plant closure.
3.Zhejiang chemical research institute	150	January 1, 2001	Production quota for Halon 1211 cancelled and production line adjusted to disable ability to produce halon 1211.	Plant closure.
Total (Quotas sold back to Gvt.)	**730**			

E. 2002 Annual Program

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1. Foshan electro-chem general plant	780 (halon 1211)	January 1, 2002	Project completed and equipment dismantled completely	Plant closure.
2.Zhejiang chemical research institute	18 (halon 1301)	January 1, 2002	Production based on the reduced halon 1301 production quota.	Partial closure.
Total	798			

F. 2003 Annual Program

Name of the plant	Halon phaseout (MT)	Closure date	Implementation status	Remarks
1. Zhejiang Dongyang Chemical Plant	240	January 1, 2003	Production based on the reduced production quota.	Partial closure.
2.Shandong Haihua Group Shouguang Fire-fighting Chemical Plant	240	January 1, 2003	Production based on the reduced production quota.	Partial closure.
Total	480			

ANNEX III
List of beneficiary fire extinguisher manufacturers

A. 1998 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date#	Remarks
1.Zhejiang Xiangshan No.1 Fire-fighting Equipment Plant	1998.03.14	223.0	Project completed and commissioned Equipment dismantled.	1999.12.21	Plant closure
2.Zhejiang Yiwu Fire-fighting Extinguisher Plant	1998.03.14	162.2	Project completed and commissioned. Equipment dismantled.	1999.06.24	Plant closure
3.Changzhou Fire-fighting Equipment Plant	1998.03.14	47.5	Project completed and Commissioned	1999.12.26	Conversion
4.Dalian Jinzhou Fire-fighting Equipment Plant	1998.03.14	105.7	Project completed and Commissioned	2000.01.05	Conversion
5.Guangxi Wuzhou Fire-fighting Equipment Plant	1998.03.14	52.4	Project completed and Commissioned	2000.01.06	Conversion
6.Guangzhou Zhujiang Fire-fighting Equipment Plant	1998.03.14	138.4	Project completed and Commissioned	2000.01.04	Conversion
7.Jiangxi No.1 Fire-fighting Equipment Plant	1998.03.14	220.8	Project completed and Commissioned	2000.01.07	Conversion
8.Nanjing Heli Fire-fighting Equipment Plant	1998.03.14	146.4	Project completed and Commissioned	1999.12.27	Conversion
9.Ningxia Yongning Fire-fighting Equipment Plant	1998.03.14	23.0	Project completed and Commissioned	2000.01.08	Conversion
10.Panyu Shengjie Fire-fighting Equipment Plant	1998.03.14	435.1	Project completed and Commissioned	2000.01.05	Conversion
11.Shanghai Haishen Fire-fighting Equipment Plant	1998.03.14	149.6	Project completed and Commissioned	1999.12.23	Conversion
12.Shanghai Punan Fire-fighting Equipment Plant	1998.03.14	268.4	Project completed and Commissioned	1999.12.24	Conversion
13.Shanghai Qingpu Fire-fighting Equipment Plant	1998.03.14	169.9	Project completed and Commissioned	1999.12.25	Conversion
14.Shenyang Fire-fighting Equipment Plant	1998.03.14	153.7	Project completed and Commissioned	2000.01.07	Conversion
15.Xiangshan Fire-fighting Equipment Plant	1998.03.14	270.6	Project completed and Commissioned	1999.12.23	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**2,566.7**			

#: **Completion date** means the date of commissioning the project by SEPA.

B. 1999 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1.Zhejiang Dongyang Fire-fighting Equipment Plant	1999.03.16	131.88	Project complete and commissioned. Equipment dismantled.	1999.12.24	Plant closure
2.Shanghai Global Fire-fighting Extinguisher Plant	1999.03.16	32.66	Project complete and commissioned. Equipment dismantled.	1999.12.22	Plant closure

3.Helongjiang Fire-fighting Equipment Plant	1999.03.16	23.4	Project completed and commissioned.	2001.03.23	Conversion
4.Guangzhou Fire-fighting Equipment Plant	1999.03.16	83.431	Project completed and commissioned.	2001.04.18	Conversion
5.Jiangsu Taixin Fire-fighting Equipment Plant	1999.03.16	336.6	Project completed and commissioned .	2001.03.01	Conversion
6.Chongqing Zhendan Fire-fighting Equipment Plant	1999.03.16	60.77	Project completed and commissioned.	2001.03.12	Conversion
7.Heilongjiang Shangzhi Fire-fighting Equipment Plant	1999.03.16	78.4	Project completed and commissioned.	2001.02.24	Conversion
8.Hubei jiangling Fire-fighting Equipment Plant	1999.03.16	194.78	Project completed and commissioned.	2001.02.26	Conversion
9.Shandong Weifang Fire-fighting Equipment Plant	1999.03.16	153.116	Project completed and commissioned.	2001.04.25	Conversion
10.Shunde Fire-fighting Equipment Plant	1999.03.16	192.72	Project completed and commissioned.	2001.04.19	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**1287.734**			

C. 2000 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1.Guangzhou Baiyun luoyang Fire-fighting Equipment Plant	2000.02.24	183.608	Project complete and commissioned. Equipment dismantled..	2000.12.23	Plant closure
2.Zhejiang Linhai Fire-fighting Equipment Plant	2000.02.24	57.5	Project complete and commissioned. Equipment dismantled.	2000.12.09	Plant closure
3.Anhui Bengbu Fire-fighting Equipment Plant	2000.02.24	142.124	Project complete and commissioned. Equipment dismantled.	2000.12.06	Plant closure
4.Suzhou Fire-fighting Equipment Plant	2000.02.24	14.2677	Project completed and commissioned.	2001.07.30	Conversion
5.Shanghai No. 4 Fire-fighting Equipment Plant	2000.02.24	74.762	Project completed and/ commissioned	2001.07.29	Conversion
6.Lianyungang Tianyi Fire-fighting Equipment Plant	2000.02.24	52.35	Project complete and commissioned.	2001.08.01	Conversion
7.Tianjin Tanggu Fire-fighting Equipment Plant	2000.02.24	45.64	Project completed and commissioned.	2001.09.21	Conversion
8.Zhejiang Wananda Fire-fighting Equipment Plant	2000.02.24	56.5	Project complete and commissioned.	2001.07.28	Conversion
9.Zhenzhou Huanghe Fire-fighting Equipment Plant	2000.02.24	25.153	Project complete and commissioned.	2001.10.28	Conversion
10.Nanjing Honghu Fire-fighting Equipment Plant	2000.02.24	81.818	Project complete and commissioned.	2001.07.31	Conversion
11.Zhuhai Zhuzhou Fire-fighting Equipment Plant	2000.02.24	80	Project completed and commissioned.	2001.10.29	Conversion
12.Fujian Changle Fire-fighting Equipment Plant	2000.02.24	284.2	Project completed and commissioned.	2001.07.11	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**1097.923**			

D. 2001 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Planned completion date	Remarks
1.Fuzhou fire-fighting equipment plant	2001.07.10	22.52	Project complete and commissioned.	2002.12.04	Closure
2.Zhenjiang fire-fighting equipment plant	2001.07.10	17.463	Project complete and commissioned.	2002.09.17	Conversion
3. Nanjing jiangpu fire-fighting equipment plant	2001.07.10	84	Project complete and commissioned.	2002.09.16	Conversion
4.Jiangsan fire-fighting equipment co.	2001.07.10	41	Project complete and commissioned.	2002.12.03	Conversion
5.Wuhan jiangan fire-fighting equipment plant	2001.07.10	16.8	Project complete and commissioned.	2002.11.13	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**181.783**			

E. 2002 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1. Ningbo Yongjiang Fire Equipment Manufacturer	2002.10.28	4.2	Project complete and commissioned.	2003.10.28	Closure
2. Anhui Wuhu Wanjiang Fire Equipment Manufacturer	2002.10.28	1.17	Project complete and commissioned.	2003.10.28	Closure
3. Haerbin Longquan Fire Tools Manufacturer	2002.10.28	3.42	Project complete and commissioned.	2003.10.28	Conversion
4. Beijing Yanqing Changcheng Fire Equipment Manufacturer	2002.10.28	4.43	Project complete and commissioned.	2003.10.28	Conversion
5. Guangdong Shantou Fire Equipment Manufacturer	2002.10.28	9.12	Project complete and commissioned.	2003.10.28	Closure
6. Zigong Jianfei Fire Equipment Co. Ltd.	2002.10.28	9.177	Project complete and commissioned.	2003.10.28	Conversion
7. Bengang Fire Equipment Manufacturer	2002.10.28	17.77	Project complete and commissioned.	2003.10.28	Closure
8. Zhejiang Huzhou Meihua Group Co. Fire Equipment Manufacturer	2002.10.28	16.50	Project complete and commissioned.	2003.10.28	Closure
9. Daqin Fire Equipment Manufacturer	2002.10.28	17.63	Project complete and commissioned.	2004.04.28	Conversion
10. Ningbo Yinghai Fire Equipment Co. Ltd.	2002.10.28	104.39	Project complete and commissioned.	2004.04.28	Conversion
Total (Average halon 1211 consumption 1995 to1997):		187.807			

F. 2003 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1.Haerbin Fire Equipment Manufacturer	2003.11.04	6.07	Ongoing	2005.05.04	Conversion
2. Jizhou City Wulu Fire Equipment Manufacturer	2003.11.04	5.43	Ongoing	2005.05.04	Conversion
3. Leqing City Donghai Fire Equipment Manufacturer	2003.11.04	1.36	Ongoing	2004.11.04	Closure
4. Kunming City Fire Equipment Manufacturer	2003.11.04	38.87	Ongoing	2005.05.04	Conversion
5. Zhejiang Jindun Fire Equipment Co'; Ltd.	2003.11.04	48.674	Ongoing	2005.05.04	Conversion
6. Hongzhou Fire Equipment Manufacturer	2003.11.04	313.2	Ongoing	2005.05.04	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**413.604**			

ANNEX IV
List of beneficiary fire fix system manufacturers

A. 1998 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1.Ningbo Sanyou Fire-fighting Equipment Ltd.	1998.03.14	50	Project completed and Commissioned	1999.12.24	conversion

B. 1999 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1.Guangzhou Fire-fighting Equipment Plant	1999.03.16	29.697	Project completed and commissioned.	2001.04.19	Conversion

C. 2000 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1. Zhuhai Zhuzhou Fire-fighting Equipment Plant	2000.02.24	40.5	Project completed and commissioned.	2001.10.29	Conversion

D. 2001 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1. Jiangxi ship's valve plant	2001.07.10	40	Project complete and commissioned.	2002.11.14	Conversion

E. 2003 Annual Program

Name of the manufacturer	Project starting date	Phaseout amount (MT)	Implementation Status	Completion date	Remarks
1. Chendu Engine Company Chenghua Fire Equipment Plant	2003.10.30	15.913	Ongoing	2005.04.30	Conversion
2.Tianjin Shengda Sercurity Science Industry Company	2003.10.30	9.23	Ongoing	2005.04.30	Conversion
3.Foshan City Yuan Fire Equipment Plant	2003.10.30	11.821	Ongoing	2005.04.30	Conversion
4. Guangzhou City Yuanhua Electrical Appliance General Plant	2003.10.30	46.026	Ongoing	2005.04.30	Conversion
5. Tianjin Fire Equipment General Plant	2003.10.30	16.06	Ongoing	2005.04.30	Conversion
6. Tianjin Minan Fire Co., Ltd.	2003.10.30	18	Ongoing	2005.04.30	Conversion

7. Nanjing Fire Equipment Co., Ltd.	2003.10.30	77.48	Ongoing	2005.04.30	Conversion
8. Xi'an Nucleus Equipment Co., Ltd. Weishi Fire Company	2003.10.30	27.503	Ongoing	2005.04.30	Conversion
9. Baoji Fire Equipment General Plant	2003.10.30	1.12	Ongoing	2005.04.30	Conversion
Total (Average halon 1211 consumption 1995 to1997):		**223.153**			

ANNEX V

A. Implementation of Technical Assistance Activities in the 1998 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Completion Date	Remarks
1.HAL-98-TA-1 Export/Import study	Beijing University	1998.09.28	Completed and commissioned	1999.11.30	Completed
2.HAL-98-TA-2 Revision of Standards for ABC Powder	Tianjin Fire Research Institute	1998.04.28	Completed and commissioned	2001.6.30	Completed
3.HAL-98-TA-3 Design Codes for Gaseous Fire Extinguishing Systems	Tianjin Fire Research Institute	1998.04.28	Completed and commissioned	2002.09	Completed
4.HAL-98-TA-4 Standards for ComponentsComponents of Gaseous Fire Extinguishing Systems	Tianjin Fire Research Institute	1998.04.28	Completed and commissioned	2001.6.30	Completed
5.HAL-98-TA-5 Halon Management Plan-Overall Management	Shanghai Fire Research Institute	1998.04.28	Completed and commissioned	1999.12.31	Completed
6.HAL-98-TA-6 Halon Management Plan-Training Courses and Propaganda Materials	Shanghai Fire Research Institute	1998.04.28	Completed and commissioned	2000.12.07	Completed
7.HAL-98-TA-7 Halon Management Plan-Provincial Promotions and Demonstration Centers	Shanghai Fire Fighting Bureau	1998.04.28	Completed and commissioned	1999.10.31	Completed
8.HAL-98-TA-8 Halon Management Plan-Provincial Promotions and Demonstration Centers	Guangdong Fire Fighting Bureau	1998.04.28	Completed and commissioned	1999.08.31	Completed
9.HAL-98-TA-9 Development of halon Management Database and Data collection System	Qinghua University	1998.04.28	Completed and commissioned	1998.09.28	Completed
10.HAL-98-TA-10 Management Information System	Qinghua University	1998.04.28	Completed and MIS accepted by SEPA	1998.04.02	Completed
11.HAL-98-TA-11 Training	SEPA		Four training workshops have been conducted	1998.12.10	Completed

B. Implementation of Technical Assistance Activities in the 1999 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Completion Date	Remarks
1. HAL-99-TA-1 Revision of national standard for CO_2 fire extinguishing agent	Tianjin Fire Research Institute	1999.11.10	1)Test equipment has been installed; 2) Information on similar international standards collected & reviewed. 3) Project completed and commissioned	2002.06.01	Completed
2. HAL-99-TA-2 Study on test method and test equipment for CO_2 fire extinguishing agent	Tianjin Fire Research Institute	1999.11.10	1) Test equipment has been installed; 2) Information on similar international standards collected & reviewed. 3) Project completed and commissioned	2002.06.01	Completed
3. HAL-99-TA-3 Revision of the design code of CO_2 fire extinguishing systems	Tianjin Fire Research Institute	1999.11.10	1) Test equipment has been installed; 2) Information on similar international standards collected & reviewed. 3) Project completed and commissioned	2002.06.01	Completed
4. HAL-99-TA-4 Formulation of national standard for HFC227 agent	Tianjin Fire Research Institute	1999.11.10	Project completed and commissioned	2002.06.01	Completed
5. HAL-99-TA-5 Study on the standard and test method of CO_2 extinguishers with light cylinders	Shanghai Fire Research Institute	1999.11.10	PCR submitted , Project completed and commissioned	2002.06.01	Completed
6. HAL-99-TA-6 Study on the scope of use of CO_2 extinguishers	Shanghai Fire Research Institute	1999.11.10	PCR submitted , Project completed and commissioned	2002.06.01	Completed
7. HAL-99-TA-7 Study on the disposal standard for Halon 1211 extinguishers	Shanghai Fire Research Institute	1999.11.10	Project completed and commissioned	2002.06.01	Completed
8. HAL-99-TA-8 Halon management plan---establishment of demonstration centers	Beijing Fire Fighting Bureau	1999.11.10	1)The demonstration center has been established and are now in operation; 1) A series of local policies have been formulated and issued. 2) Halon consumption survey has been carried out. 3) Propaganda has been launched on newspaper, magazines and TV 5) Project completed and commissioned.	2001.10.10	Completed
9. HAL-99-TA-9 Policy study of demonstrative halon bank	Guangdong Fire Fighting Bureau	1999.11.10	1) International Information on halon bank policies have been collected and reviewed; 2) The framework of Guangdong demonstrative halon bank has been formulated. 3) Recycle and reclaim procedure has been studying and testing. 4) Project completed and commissioned	2001.10.10	Completed
10. HAL-TA-10 Trianing	SEPA		Four training workshops have been conducted activities completed	1999.31.12	Completed

C. Implementation of Technical Assistance Activities in the 2000 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Planned /Actual Completion Date	Remarks
1. HAL-00-TA-1 Design code for Water Mist Fire extinguishing System					Cancelled
2. HAL-00-TA-2 Performance test Method of Components for Water Mist Fire Extinguishing Systems			Defer to 2004.		Prepare for TOR
3. HAL-00-TA-3 Propaganda for Halon Sector Approach and Halon Alternative Technology	Shanghai Aozhen Technology Development Company	2000. 10.15	The book was finished, published and handed out to relevant parties. Project completed and commissioned	2000.12.31	Completed.
4. HAL-00-TA-4 Design Code for Dry Powder Fire Extinguishing System			Defer to 2004.		Prepare for TOR
5. HAL-00-TA-5 Tests equipment for light weight CO2 Cylinders	Shanghai Fire Research Institute	Oct. 2001	Contract signed in 2001and project started. The project was behind the schedule one year because of an imported equipment delivery delayed	2003.12.31	PCR is under preparation.
6. HAL-00-TA-6 Future requirements for essential uses, Special places					Cancelled
7. HAL-00-TA-7 Standards for Mechanic foam extinguishers					Cancelled
8. HAL-00-TA-8 Standards for portable dry powder extinguishers					Cancelled
9. HAL-00-TA-9 Nitrogen system					Cancelled
10. HAL-00-TA-10 Training	DIA		Four training workshops were carried out	Within 2000	Completed

D. Implementation of Technical Assistance Activities in the 2001 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Planned /Actual Completion Date	Remarks
1. HAL-01-TA-1 Formulating Design Code for Mist Water Fire Extinguishing System					Cancelled
2.HAL-01-TA-2 Revision of Design Code for Installation of Fire Extinguishers for Buildings					Cancelled
3. HAL-01-TA-3 Feasibility Study on Substitutes for Halon Fixed Fire Extinguishing Systems					Cancelled
4.HAL-01-TA-4 Studies of Market Prospect for Closure Enterprises	Seven enterprises were chosen to carry out the project	2001.4.10	Completed.	December 2002	Completed
5. HAL-01-TA-5 Training	DIA		Four training programs were carried out	2001.12.31	Completed

E. Implementation of Technical Assistance Activities in the 2002 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Planned Completion Date	Remarks
1.HAL-02-TA-1 Study on Evaluation Method of Engineering Application of Inert Gases Fire-fighting System	Tianjin Fire Research Institute	2003.09	Making out the work plan and conduct for investigation	2005.09	ongoing
2. HAL-02-TA-2 Evaluation Method of Engineering Application of Heptfluoride Propane Fire-fighting System	Tianjin Fire Research Institute	2003-09	Making out the work plan and conduct for investigation	2005.11	ongoing
3. HAL-02-TA-3 National Standard Formulation for General Specifications of Low-pressure Carbon Dioxide Fire-fighting System and Parts	Tianjin Fire Research Institute	2002.12	Completed and submitted PCR Prepare for commission.	2004.06	ongoing
4. HAL-02-TA-4 Study on the Testing Equipment and Technology of Aerosol Fire Extinguishing Agent	Tianjin Fire Research Institute	2002.12	Established the test equipment and carried out tests. Prepare for test report	2004.12	ongoing
3. HAL-02-TA-5 Standard Formulation for Aerosol Fire Extinguishing Agent	Tianjin Fire Research Institute	2002.12	Completed and submitted PCR Prepare for commission.	2004.06	ongoing
4. HAL-02-TA-6 Study on Testing Equipment and Technology of Heptfluorid Propane Fire Extinguishing Agent	Tianjin Fire Research Institute	2002.12	Established the test equipment and test method. Prepare for the PCR.	2004.08	ongoing
5. HAL-02-TA-7 National Standards Formulation for Inert Gas Fire Extinguishing Agent	Tianjin Fire Research Institute	2002.12	Completed and submitted PCR Prepare for commission.	2004.06	ongoing
6. HAL-02-TA-8 Study on the Testing Equipment and Technology of Inert Gas Fire Extinguishing Agent	Tianjin Fire Research Institute	2002.12	Established the test equipment and test method. Prepare for the PCR.	2004.08	ongoing
7. HAL-02-TA-9 Liaoning Halon Management Plan	Liaoning Fire Bureau	2002.09	Completed and submitted PCR Prepare for commission.	2004.04	ongoing
11. HAL-02-TA-10 Training	DIA		three training workshops were carried out	2002.12.31	Completed
12. HAL-02-TA-11 Performance Audit	CNAO		Performance audit was conducted from April-June, 2002	2002.10,31	Completed

F. Implementation of Technical Assistance Activities in the 2003 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Planned Completion Date	Remarks
1.HAL-03-TA-1 Standard of "General Specifications of Aerosol Fire Extinguishing Equipment"	Selected bidder	2003.12	Make out work plan and collecting technical information for the standard.	2005.06	ongoing
2.HAL-02-TA-2 Testing Equipment and Technology for Aerosol Fire Extinguishing Equipment	Selected bidder	2003.12	Make out work plan and collecting technical information	2005.12	ongoing
3.HAL-03-TA-3 Performance Audit of 2002	CNAO	2003.03	Performance audit was conducted from March-June, 2003	2003.09	completed
4.HAL-03-TA-4 Training	DIA		Two training workshops have been carried out in the second half of 2003	2003.12.31	completed

G. Implementation of Technical Assistance Activities in the 2004 Annual Program

Name of TA Projects	Implementing Agencies	Contract Date	Implementation Status	Planned Completion Date	Remarks
1. HAL-04-TA-1 .Standard for Performance Requirements and Test Methods of Components for Water Mist Fire Extinguishing Systems	Selected bidder	In the second half of 2004	TOR under preparation	18 months after contract signing	
2.. HAL-04-TA-2 Design Code for Dry Powder Fire Extinguishing Systems	Selected bidder	In the second half of 2004	TOR under preparation.	24 months after contract signing	
3. HAL-04-TA-3 Performance Audit of 2003	CNAO	2004.03	Performance audit was conducted from March-June, 2004, audit report has been submitted to World Bank.in July 2004.	2004.04	completed
4.HAL-04-TA-4 Training	DIA		One training workshop has been hold in April 2004 for auditors. One will carried out in the second half of 2004.	End of 2004.	ongoing

ANNEX VI

Special Initiatives

Special initiative	Name of the manufacturer	Project starting date	Implementation Status	Planned completion date	Remarks
HAL-99-SI-01 ABC Dry Powder Production Line	Foshan Electro-Chem General Plant	1999.05.12	Project completed and commissioned.	2001. 10.12	Completed
HAL-00-SI-01 National Halon Phaseout Conference	SEPA	2000.08.01	The conference was held on Nov. 22, 2000. Activity completed	2000.12.31.	Completed
HAL-00-SI-02 Halon Bank Guangdong Branch	Panyu Shengjie Fire Fighting Equipment Plant	2000.08.05	Project completed and commissioned.	2004.07.21	Completed
HAL-00-SI-03 Light Weight CO_2 Cylinders	Weifang Dongming Fire-fighting Equipment Co., Ltd.	2000.11.18	. Project completed and ready for commission.	2003.11.18	Prepare for PCR.
HAL-00-SI-04 Plant Protein Foam test laboratory Project	Honsen Fire-fighting Hi-tech Co., Ltd.	2000.08.31	Project Completed and commissioned.	2002.10.29	Completed
HAL-02-SI-01 Development of a 3,600 MT Production Line of Honsen L119 Vegetable -protein Foam Extinguishing Agent	Dalian Honsen Hi-tech Fire-fighting Co., Ltd.	2003.10.09	The contracts for key equipment procurement have been signed on June 2004.	2005.10.09	Ongoing
HAL-03-SI-01 Survey for CO_2 Extinguisher Production	Shanghai Fire Research Institute	2003.06	The initial survey and ready for SEPA's commission. Final verification to be done beginning 2006 as per the agreement	2006.06.30	Ongoing
HAL-03-SI-02 Operation of Halon banking	Panyu Shengjie Fire Fighting Equipment Plant		TOR under preparation.		
HAL-04-SI-01 Hexafluorapane Agent Standard and Testing Technology			Selecting the consultant.		
HAL-04-SI-02 Research on Hexafluorapane$_2$ extinguisher			Selecting the consultant.		
HAL-04-SI-03 Expand the production of CO_2 extinguisher			Carrying out the assessment of CO_2 extinguisher producers .		