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执行蒙特利尔议定书多边基金
执行委员会
第四十二次会议
2004 年 3 月 29 日至 4 月 2 日，蒙特利尔

项目提案：中国

本文件载有基金秘书处对以下项目提案的评论和建议：

<u>其他</u>

- 烟草行业的淘汰 CFC-11 计划： 2004 年工作计划 工发组织

<u>生产</u>

- CFC 生产淘汰方案：2003 年核查报告和 2004 年工作方案 世界银行

<u>清洗</u>

- 在中国清洗行业淘汰消耗臭氧层物质：2004 年支付部分 开发计划署

项目评价表

中国

行业：其他　　行业消耗臭氧层物质使用量(2003 年)：620 ODP 吨
分级行业成本效益临界值：　　不适用

项目名称：

（a） 烟草行业淘汰 CFC-11 计划：2004 年工作计划

项目数据	其他(烟草膨胀)
企业消费量 (ODP 吨)	
项目影响 (ODP 吨)	200
项目期限 (月)	12
申请的初始金额 (美元)	1 800 000
最终的项目费用 (美元)：	
增加基本建设费用 (a)	1 800 000
应急费用 (b)	
增加经营费用 (c)	
项目总费用 (a+b+c)	1 800 000
当地所有权 (%)	100%
出口部分	0%
申请的金额 (美元)	1 800 000
成本效益 (美元/公斤)	9.00
对应方供资是否确认？	
国家协调机构	国家环境保护总局
执行机构	工发组织

秘书处的建议	
建议的金额 (美元)	1 800 000
项目影响 (ODP 吨)	200
成本效益 (美元/公斤)	9.00
执行机构支助费用 (美元)	135 000
向多边基金申请的总费用	1 935 000

项目说明

烟草行业淘汰 CFC-11 计划：2004 年工作计划

背景

1. 第三十二次会议核准了中国政府与执行委员会有关在中国实施烟草行业淘汰 CFC-11 计划(行业计划)的协定，并为执行 2001 年工作方案向工发组织拨付了 200 万美元。还要求工发组织向执行委员会以后的会议报告作为支助费用拨付的经费的使用情况，两年后将对此进行审查(第 32/69 号决定)。

2. 在第三十六和第三十九次会议上，执行委员会为工发组织核准 400 万美元的经费(每次会议 200 万美元)，作为在中国执行烟草行业淘汰 CFC-11 计划的第二和第三笔经费。

3. 中国政府提交了有关 2003 年工作方案执行情况的进度报告，以及用于执行 2004 年度工作方案的 180 万美元的申请，供执行委员会第四十二次会议审议。

关于 2003 年工作方案执行情况的进度报告

4. 2003 年初，根据 2003 年烟草行业总的消费配额和企业目前的产量，确定了每个企业消费 CFC-11 的配额。截至 2003 年 12 月底，根据企业报告的 CFC-11 的消费量，CFC-11 的总消费量不到 620 ODP 吨，比行业计划确定的 CFC-11 的消费水平少 80 ODP 吨。

5. 三十一家有资格的烟草膨胀公司应邀通过公开投标制度逐步取消它们 2003 年 CFC-11 配额。投标于 2003 年 3 月进行；八家有意在 2003 年拆除其 CFC-11 设备的公司投了标(工发组织对投标过程非常了解并且修订了所有相关文件)。

6. 2003 年 3 月，国家烟草专卖局和国家环境保护总局审查了报价并且选定以下十家公司拆除它们的 CFC-11 膨胀设备(2003 年 5 月与这些企业签定了合同)：

行业计划编号	公司名称	膨胀单位	安装日期
5	漯河卷烟厂(两个系列中的一个	1	1994 年 10 月
15	贵阳卷烟厂(两个系列中的一个)	1	1992 年 10 月
17	贵定卷烟分厂(贵定 2)	1	1992 年 9 月
24	红安卷烟厂	1	1992 年 3 月
26	湖北三峡烟草公司(丹阳卷烟厂)	1	1992 年 9 月
29	北京卷烟厂	1	1990 年 4 月
46	哈尔滨卷烟厂	1	1992 年 1 月
48	天津卷烟厂	1	1992 年 6 月
总计		8	

7. 另有五个企业(成都、阜阳、滁洲、合肥和兰州)在 1995 年 7 月 25 日以后安装的五个 CFC-11 基设备(因此没有资格获得资金)在中国政府的监督下拆除，但没有获得多边基金的补偿。

8. 建议在 2003 年开展下述技术援助活动：

（a） 研究使用非 CFC-11 替代技术生产的膨胀烟草的技术规格和质量控制；

（b） 水高温气流干燥膨胀技术评估；及

（c） 为向好几家卷烟厂供应膨胀烟草而在徐州建造的 CO_2 烟草膨胀单位的可行性评估。

9. 不过，由于 2003 年 SARS 造成的问题，这些技术援助方案的实施推迟了。计划在 2004 第二季度完成这些活动。

2004 年度工作方案

10. 2004 年工作方案中将开展的主要活动有：

（a） 对于 2004 年剩下的 500 ODP 吨 CFC-11 消费量，由中国政府分配新的 CFC-11 配额(企业必须遵守规定的消费配额，否则在 2005 年将受到减少配额的处罚)。剩下的 23 家有资格的企业将应邀通过公开投标机制提出它们的配额。2004 年 4 月将开标。

（b） 研究各种烟叶原料对 CFC-11 膨胀烟草的影响(第一阶段)。在中国生产的各种烟叶的特性不同，因而要求有针对性的膨胀处理，以获得满足卷烟厂需要的稳定质量。因此，该研究的目的是优化膨胀烟草的质量，避免在使用用非 CFC-11 技术生产的膨胀烟草时出现的问题；以及

（c） 信息、宣传、提高认识和培训方案，包括为国家烟草专卖局和国家环境保护总局工作人员举办有关项目管理和实施的培训班；为放弃配额和投标而建立的投标机制；签署 CFC-11 设备关闭合同以及设备处置；审计机制；替代设备和供应商。

11. 2004 年将开展的活动及预期结果见下表：

淘汰 CFC-11	说明	申请资金(美元)
早期活动	完成烟草行业 CFC-11 消费配额许可制度。 分配消费配额。	
拆除 CFC-11 设备	淘汰 200 ODP 吨 CFC-11 拆除通过招标选出的以 CFC-11 基设备 在拆除设备后编写完成报告	1 700 000
	关闭与拆除小计	1 700 000
技术援助活动		
信息、提高认识和培训	配额许可、提高认识和培训	45 000
研究各种烟叶原料对非 CFC-11 膨胀烟草的质量的影响(第一阶段)	为优化膨胀烟草的质量而进行的研究	55 000
	技术援助活动小计	100 000
	总计	1 800 000

12．此外，中国政府提出开展下述两个技术援助方案，经费将来自以前的工作方案未花完的余额：

（a） 研究 CO_2 膨胀技术如何影响不稳定的烟草化学成分。研究目的是了解用 CO_2 技术来膨胀烟草导致的烟草香气的变化并通过控制温度和香味添加剂来解决这些问题，以确保与过去用 CFC-11 基设备来膨胀烟草相同的卷烟质量。

（b） 完成各种烟叶原料对非 CFC-11 膨胀烟草的质量影响的研究(如前所述)。

秘书处的评论和建议

评论

13． 秘书处审查了工发组织根据中国政府与执行委员会的协定提交的关于 2003 年工作方案的执行情况以及烟草行业淘汰战略的进度报告。秘书处注意到通过 2003 年开展的活动，烟草膨胀消费的 CFC-11 减少了 180 ODP 吨，超过商定的数量 80 ODP 吨。

14． 关于 2004 年工作方案，秘书处注意到 200 ODP 吨的 CFC-11 淘汰目标与协定相符。

15． 秘书处要求说明 2003 年工作方案中所计划的技术援助活动的推迟执行可能对烟草膨胀行业 CFC-11 总体淘汰计划产生的影响。工发组织报告说由于 SARS 的流行，技术援助活动的实施推迟了 5 个月；不过，所有活动有望在 2004 年 5 月完成。延误主要影响强制执行膨胀烟草的技术规格和作出有关 CO_2 膨胀工厂的投资决定(大多数设备供应商能够提供较短的交货时间安排)。

16． 自核准项目以来，节省了 385 000 美元。中国政府计划将 2001 年节省的经费用于 2003 年的工作方案，再开展两个技术援助活动，以解决 CO_2 膨胀烟草方面的具体问题。尽管似乎已在努力开展这些活动，但还可以利用执行委员会赋予项目实施的灵活性，向新活动提供资金。

建议

17． 基金秘书处建议一揽子核准第四期项目，其供资水平和相关支助费用如下表所示：

	项目名称	项目资金(美元)	支助费用(美元)	执行机构
(a)	烟草行业淘汰 CFC-11 计划：2004 年工作计划	1 800 000	135 000	工发组织

中国 CFC 生产淘汰方案
2003 年核查报告

项目说明

18. 按照根据协定为中国 CFC 生产行业计划作出的安排，世界银行向 2003 年 12 月第四十一次会议提交了中国 2004 年度 CFC 生产行业淘汰方案。执行委员会决定“核准中国 CFC 停产方案 2004 年工作方案，并说明将由世界银行向第四十二次会议提出供资和支助费用申请，同时还将提交有关 2003 年度方案执行情况的核查报告”(第 41/63 号决定)。

19. 世界银行正按要求向第四十二次会议提交 2003 年中国 CFC 生产淘汰方案执行情况核查报告(未附数据部分)。该报告介绍了对按 2003 年度方案规定的配额办法生产的 6 种植物(按 SRIC 审计报告编号定为 A8、A10、B11、B8、B12 和 B14)进行核查的情况。

20. 报告包括一个结论摘要和 4 个附件。结论摘要介绍了 2003 年工作方案执行情况核查小组对协定目标实现情况所作的全面评估，提供了 CFC 总产量的综合数据 CFC-11、CFC-12、CFC-113、CFC-114、CFC-115、CFC-13 等各种物质的详细数据和原料的总消费量，并提出了核查期间确认的主要问题。此次核查的总体评价是，中国遵守了协定中确定的 2003 年 CFC 年度生产指标，实际总产量为 29 985.71 ODP 吨，而协定中确定的产量为 30 000 ODP 吨。

21. 附件一介绍了对生产厂家逐一进行核查的过程，并论述了调查结果。开头部分评估了生产厂家落实上一次审计的改进建议情况，接着对记账质量发表了看法，并详细说明了用于核查 CFC 生产和原料消费情况的方法和记录。对核查小组在视察期间确认的问题进行了讨论。有关各个生产厂家的核查结论源于对有生产配额的公司履约情况的评估。

22. 附件二以执行委员会认可的方式列示了调查结果，并包括有关生产能力、生产配料、生产配额和 CFC 月生产量、原料消费比率和原料月库存变化以及经营天数等数据。提供有关这些淘汰方案期限参数的可比数据，是为了协助进行连贯性的查对工作。

23. 附件三详细介绍了两个 CFC 生产厂 2002 年底完全关闭的情况以及 2003 年初对拆除两个生产厂的工作进行核查的结果。第一个关闭的生产厂家是广东 Xiansheng 化学有限公司 CFC-12 生产行业(在审计报告中被定为 A13)，根据与国家环境保护总局达成的关闭合同，并在环保总局和当地环保局的见证和证明下，该生产行业的设施被拆除。所有设备都从厂房搬走，不能修理的就被销毁。CTC 和 CFC-12 产品储存库全部腾空，储存库四壁穿有孔眼，剩余的 CFC-12 产品被储存在圆筒内。第二个关闭的厂家是浙江 Linhai Limin 化工厂 CFC-12 生产行业，拆除工作是于 2003 年 1 月，在环保总局和当地环保局的见证和证明下进行的。销毁的设备包括两个煤气库、两个 CFC 反应器、产品接收器、蒸馏塔、

再沸器和控制器。20 多吨废金属被卖掉，CFC 生产人员被收编，从事该厂新化学品的生产。CFC-12 生产行业关闭后，浙江 Linhai Limin 化工厂只生产数量有限的 CFC-13。

24. 在上述两种情况下，核查小组视察了被拆除的生产行业厂址，并审查了拆除工作录像。它们收到了当地环保局签发的拆除证明书，并满意地了解到，拆除工作十分彻底，两个生产行业均无法再恢复 CFC-12 的生产。附件三最后部分按核查淘汰消耗臭氧层物质生产准则规定的格式列示了 2002 年两个生产厂家关闭前的 CFC 生产数据。

25. 附件四介绍了核查小组财务专家提供的财务审计结果。审计重点是通过检查原材料采购和消费等方面的财务记录，对 CFC 生产情况进行核查。报告提供了对各生产厂家的 CTC 和 HF 消费量、CFC 产量、其产品在海内外的销量及其出口目的国进行审计的结果。

秘书处的评论和建议

评论

按核查淘汰消耗臭氧层物质生产准则对 2003 年核查工作进行的全面评估

26. 该核查小组对 2003 年工作方案执行情况的核查适用了以前进行核查时采取的规则和方法，并提供了一些信息，如对以前进行核查期间确认的问题的讨论，为改进工作状况每年就这些问题采取的后续措施等。核查结果是按核准的格式提供的，并有充分的文件资料加以佐证，以便能够追踪和验证 CFC 的产量以及原料的消费量。

遵守《蒙特立尔议定书》CFC-13 控制附表

27. 核查小组证实，2003 年中国的 CFC-13 产量减少了 20%，即 5.7 ODP 吨，从 27 ODP 吨的基数(1998-2000 年的平均产量)喊至 21.3ODP 吨。这符合《蒙特利尔议定书》CFC-13 附表规定的标准。

CFC-11 最高消费限额落实情况

28. 经核实的 CFC-11 产量为 13 828.38 ODP 吨，未超出 2003 年 CFC-11 最高消费限额 15 500 ODP 吨的范围，这一最高消费限额是《中国聚氨脂泡沫塑料行业 CFC 淘汰协定》中确定的限额。

与遵守生产配额有关的问题

29. 秘书处就 2001 和 2002 年 CFC 生产情况核查报告发表的评论意见反映了核查小组所关注的情况，即某些生产商所报告的产量与给其规定的配额有一定的差距。秘书处还支持注重对某些公司所谓的 CFC“加工”储存进行核查。国家环保总局已正式通知所有生产商，要求它们保存“加工”储存前后情况的记录供检查，而且“加工”储存的任何增加均

须列入年度报告的产量内。在此要求下，这方面的情况已有好转。但是，某个公司依然未完全按配额进行生产。

30. 从 2003 年的报告可以看出，所有生产商的销售额均有改变，CFC 的国内销量下降，国外销量上升。这可能与中国 CFC 替代品的价格动向有关。最近，在对 CFC 生产淘汰协定执行情况进行评价期间，秘书处的代表访问了中国。他在访问中了解到，HCFC-141b 和 HCFC-22 的价格已下降到与 CFC-11 和 CFC-12 的价格持平，甚至更低，这可能是因为中国已说服许多 CFC 最终用户比最初计划提前放弃了的这类物质。这可以保证中国为同时淘汰 CFC 的生产与消费进行严密监测。

31. 根据它向执行委员会第三十六次和第三十九次会议提供的资料，秘书处没有在其评论中列入核查报告附件二中的数据和附件三中的数据部分。不过，这些数据可以提供给提出请求的委员会任何成员。

建议

32. 秘书处建议执行委员会向世界银行发放 1 300 万美元的款项，用于执行中国 CFC 生产淘汰方案 2004 年工作方案，并为世界银行提供 975 000 美元的支助费用。

项目评价表

中国

行业：清洗	行业消费臭氧层物质使用量(2003 年)	CFC-113：	1 700 ODP 吨
		TCA：	580 ODP 吨
		CTC：	55 ODP 吨
次级行业成本效益临界值：			不适用

***项目名称*:**

(a) 在中国清洗行业淘汰消耗臭氧层物质：2004 年部分

项目数据	清洗
企业消费量 (ODP 吨)	
项目影响 (ODP 吨)	1 602
项目期限 (月)	12
申请的初始金额 (美元)	5 555 000
最终项目费用 (美元)：	
增加基本建设费用 (a)	5 555 000
应急费用 (b)	
增加经营费用 (c)	
项目总费用 (a+b+c)	5 555 000
当地所有权 (%)	100%
出口部分 (%)	0%
申请的金额 (美元)	5 555 000
成本效益 (美元/公斤)	
对应方供资是否确认？	不适用
国家协调机构	非洲科教方案
执行机构	开发计划署

秘书处的建议	
建议金额 (美元) 项目影响 (ODP 吨) 成本效益 (美元/公斤) 执行机构支助费用 (美元)	
向多边基金申请的总费用	

项目说明

在中国清洗行业淘汰消耗臭氧层物质：2004 年部分

背景

33. 开发计划署代表中国政府，向执行委员会第四十一次会议提交了 2003 年度进度报告以及中国清洗行业淘汰消耗臭氧层物质计划 2004 年执行方案。编写该报告时尚未进行 2002 年度方案执行情况审查。在第 41/73 号决定中，执行委员会请开发计划署再次向第四十二次会议提交 2003 年进度报告以及包含执行情况审查要求的 2004 年执行方案。

34. 提交第四十一次会议的 2003 年度进度报告介绍了 2003 年开展的一些活动，这些活动的目的是要实现该协定中规定的 2003 年消费控制目标(CFC-113：1 700ODP 吨；TCA：580 ODP 吨；CTC：55 ODP 吨)。按协定要求，报告还说明了为证实中国在过去一年，即 2002 年已实现消费量累积下降这一事实所开展的审计活动。

35. 在 UNEP/OzL.Pro/ExCom/41/28 号文件中，秘书处在评论(第 28 至 31 页)中说明，中国通过开发计划署报告了如下情况：它已达到 2002 年消费控制目标；它只对 CTC 指标的实现情况作了审计；它已圆满完成 2003 年度方案确定的绩效指标。秘书处还注意到，在中国，CFC-113 依旧作为原料使用，用量超过了协定规定。

36. 秘书处只对拟议的 2004 年度执行方案发表了评论意见，并要求明确新提出的两种执行方式，这两种执行方式分别采用逐步淘汰和追溯性补偿的办法(由开发计划署提供，并列入上述文件第 91 段)。

37. 开发计划署编写了一份补充报告(附于本文件)，其中加进了 2002 年度执行方案落实情况审计结果，对有关 2003 年度方案执行情况的资料作了一些小的修订，并论述了秘书处在提交第四十一次会议的报告评论中提出的将 CFC-113 用作原料的问题。

38. 下文提供的资料涉及补充报告。

补充报告

39. 补充报告载有 2003 年签订的淘汰合同修订数字(下表 3(经过修订))表明。同上一份报告中列明的数字相比，2003 年签订的 CFC-113 和 TCA 淘汰合同实际水平降幅不大。不过，淘汰计划中增加了现正进行的一些项目，将这些项目所达到的实际淘汰水平包括在内，约定的淘汰量仍超过为实现协定中确定的减量目标所规定的数量。

表 3(经过修订)：通过 2000-2003 年消耗臭氧层物质减量合同实现淘汰凭单系统和补偿机制

			CFC-113 (ODP 公吨)	TCA (ODP 公吨)	CTC (ODP 公吨)	企业编号	供资额 (1 000 美元)
2000 年	今后淘汰合同	已计划	372.8	10	0	10 – 20	5 000 美元
		已签订	378.4	10.1	8.36	16	4 132 美元
	实现的淘汰	现正进行的项目	-	7.4	-		
		2000 年淘汰总量	-	7.4	-		
2001 年	今后淘汰合同	已计划	524	10	0	10 – 20	5 505 美元
		已签订	541.6	10.6	0	21	4 361 美元
	实现的淘汰	现正进行的项目	54.1	-			
		2000 年合同	340.1	9.8	8.36		
		2001 年淘汰总量	394.2	9.8	8.36		
2002 年	今后淘汰合同	已计划	500	25	55	20 – 40	5 830 美元
		已签订	535.8	43.2	17.94	32	4 004 美元
	实现的淘汰	现正进行的项目	291.3	41.7			
		2000 年合同	38.4	0.4	-		
		2001 年合同	-	-			
		2002 年淘汰总量	329.7	42.1	-		
2003	今后淘汰活动	已计划	600	78	55	120-140	5 255 美元
		已签订	475.3	37.9	0	226	5 100 美元
	实现的淘汰	现正进行的项目	-	-	-		
		2001 年合同	336.3	7.3			
		2002 年合同	-	-	-		
		2003 年活动*	142.1	44.9			
		2003 年淘汰总量	478.4	52.2	-		
2004 年	实现的淘汰	2001 年合同+	178.9	2.8	-		
四年累积总量	计划的淘汰		1 996.8	123	110		
	淘汰目标		2 200	119	110		
	现正进行的项目和签订的合同完成后将实现的淘汰		2 276.5	150.9	26.3		
	迄今实现的实际淘汰+		1 381.2	114.3	8.36		

* 源自 2003 年追溯性补偿和逐步淘汰活动
+ 截至 2004 年 2 月实现的淘汰

40. 补充报告还根据协定中确定的低水平最高产量(10 ODP 吨)，对 CFC-113 用作原料的数量作了说明。中国指出协定中确定的 10 ODP 吨估计过低，并提供资料证明，中国已作出各种安排，确保为作为原料生产的大量 CFC-113 不被转作溶剂使用，并表明要承诺确保逐步减少原料数量并每年进行报告。在此基础上，中国请求允许它超过协定中确定的 10 ODP 吨 CFC-113 的原料数量。

41. 报告详细介绍了为核查 2002 年淘汰目标和消费限额进行绩效审计的范围、过程、结论和存在的问题。以下几点表明了审计的范围：

(a) 核查 2002 年 CFC-113、TCA 和 CTC 作为清洁剂使用的全国消费水平；

(b) 核查在单个企业一级，为 21 个已签订消耗臭氧层物质减量合同的企业开展淘汰活动并在 2003 年实现淘汰目标的情况；

(c) 核查政策措施和技术援助活动的开展情况。

42. 为落实协定规定，进行审计时必须确定 2002 年将 CFC-113、TCA 和 CTC 用作溶剂的消费控制目标。在这方面，补充报告作了如下说明：

> “根据中国审计署有关 CFC-113 生产情况的审计报告以及政府的官方进出口数据，经核实的全国 CFC-113 消费量为 2 196 ODP 吨，低于 2002 年 2 200 ODP 吨的消费控制目标。
>
> 根据世界银行和管理贷款基金秘书处的视察报告，2002 年 TCA 总产量为 120.5 吨。消耗臭氧层物质进出口控制办公室提供的数据显示，TCA 进口量为 261.74 ODP 吨，出口量为 1.6 ODP 吨。因此，TCA 的全国消费总量为 380.64 ODP 吨，低于 2002 年 605 ODP 吨的消费控制目标。
>
> 关于将 CTC 用作清洁剂的情况，一项独立的审计证实，原有 34 家 CTC 消费企业，现剩下 21 家，其 2002 年的消费量为 10.47 ODP 吨。最初调查中确认的这些企业的 CTC 消费量占全国消费量的 38.3%，据推断，2002 年的 CTC 消费量可能是 27.34 ODP 吨，低于 2002 年 110 ODP 吨的消费控制目标。”

43. 关于 2003 年度执行方案的进展情况，审计表明 2001 年签订的减量合同计划淘汰 CFC-113 541.58 ODP 吨，淘汰 TCA 10.6 ODP 吨。到 2003 年 10 月底淘汰的 CFC-113 总量仅为 64.5 ODP 吨，淘汰的 TCA 总量为 3.9 ODP 吨。审计报告确认，这方面工作拖延的主要原因是淘汰活动错综复杂，对增订设备规格的要求不一，而且中国出现的 SARS 推延了设备的交付。审计人员还提出了他们的看法，认为 2003 年的预期目标可以实现。在上文转载的修订表 3 中，中国说明 2001 年同类合同实现的淘汰量到 2004 年 2 月已增加到 CFC-113 515 ODP 吨，TCA 10.1 ODP 吨。

44. 审计还表明，由于执行工作的拖延，基准设备处置时间表没能按合同规定制订。两个有关企业没有销毁，而是卖掉了设备。已要求中国环保总局采取行动收回这些设备，加以处理并在今后努力改进和适当监测设备处置工作。

45. 开发计划署本身也承担了技术审计工作。它对 2001 年签订了合同的 21 个企业中的 14 个企业进行了视察。结果(补充报告第 7 页)表明，这些企业为完成淘汰作出了认真的努力，但在改变设备规格方面出现拖延，而且设备交货迟缓，在设备的使用或所用清洁剂的类型上存在一些实际问题，仍需加以解决。视察结果还表明，中国环保总局和开发计划署将努力解决这些问题。

46. 根据向执行委员会第四十一次会议提交的报告和向本次会议提交的补充报告，中国请求发放议定的 2004 年 5 555 000 美元供资，外加 416 625 美元支助费用。

秘书处的评论和建议

评论

47. 关于 2002 年的消费限额，审计结果表明，中国遵守了协定要求。至于 CTC，正如秘书处在提交第四十一次会议的评论中指出的，中国遵守协定的情况是在统计估算的基础上确认的。秘书处注意到，执行委员会以前在对 2001 年消费量进行审计时曾采用过这种方法。

48. 表 3 也列明了每年完成的合同和以前核准的项目(全部于 2002 年底完成)所实现的淘汰目标。秘书处请开发计划署澄清一些情况，因为在正进行的项目和根据该计划实施的新项目中，淘汰总量低于国家一级报告的淘汰总量，后者与协定中确定的消费限额相一致。例如，在 2002 年底以前完成的项目中，TCA 的淘汰总量为 58.4 ODP 吨，而全国 2000 年至 2002 年期间的消费量减少了 240 ODP 吨。2000 年至 2002 年期间完成的项目中，CFC-113 的淘汰量为 724 ODP 吨，而全国消费量减少了 1 108 ODP 吨。

49. 开发计划署建议，对供应方采取的政策措施和控制办法也应有助于实现淘汰和确保可持续性。在这方面，已对消耗臭氧层物质减量合同所达到的淘汰水平、凭单系统和追溯性补偿或逐步自行淘汰情况进行了监测，并根据该计划作了报告。但是，一些企业在计划活动以外所实现的消费淘汰和减量未纳入计划规定的企业淘汰报告安排。这些企业根据市场的需要或中国环保总局确定的政策措施，主动进行了技术转换活动。不过，全国的消费水平将能体现出上述减量。因此，全国消费量的实际减少总会超过按计划开展淘汰活动所达到的淘汰量。

50. 开发计划署还注意到，通过对供应的控制，CFC-113 的生产配额被限制在将 CFC-113 用作溶剂的最高限额内。由于禁止进口 CFC-113，所能得到的用于消费的 CFC-113 的数量已限制在消费控制目标之内。至于 TCA，中国环保总局在消费控制目标范围内颁发

了进口和生产配额。因此，TCA 的消费量也受到了限制。将 CTC 作为溶剂消费的做法自 2003 年中以来就已禁止。

51. 另外，消耗臭氧层物质消费者购买 OD 溶剂必须申请使用许可证，进口商和分销商只能向持有使用许可证的消费者出售 OD 溶剂。因此，OD 溶剂的消费在供求双方那里得到严格控制。中国坚信，它通过实施政策措施和在企业一级开展淘汰活动，将会实现年度消费控制目标。

52. 关于用作原料的 CFC-113 的数量，补充报告明确论及了中国目前的情况，并指出中国同意列入原协定的 10 ODP 吨数量估计过低。中国在补充报告中承诺，它将防止将作为原料生产的一些 CFC-113 转用为溶剂，并逐步减少这种数量。注意到这一点，秘书处请开发计划署提供一份减量时间表。

53. 开发计划署说明，中国环保总局已颁布了一项于 2003 年底开始生效的条例，将作原料用的 CFC-113 消费量限定在规定的 10 ODP 吨以内。不过，秘书处请开发计划署同中国政府重新进行审查，因为 2003 年生产行业淘汰落实情况核查报告表明，被用作其他工业产品如氯四氟乙烯(CTFE)生产原料的 CFC-113 的产量连年保持在至少 1 900 ODP 吨的水平上。可能存在的一个问题是如何对原料加以界定，以及 CFC-113 是否可视为一种单一生产过程的中间产品。开发计划署正在与中国政府调查这方面情况，并有待提出补充建议。

54. 以开发计划署提供的补充资料为条件，并注意到前几期方案即使 CFC-113 原料用量不符合协定规定也依然被核准这一现象，执行委员会不妨考虑在 CFC-113 原料继续超出 10 ODP 吨限额的情况下，是否同意继续核准 2004 年度方案。

55. 关于 2003 年度执行方案的其他活动，秘书处在为第四十一次会议所作的项目评价中说明，开发计划署提供的一份成果报告指出，按 2003 年度执行方案的指标衡量，所述活动取得了令人满意的成果。

建议

56. 根据对于中国将 CFC-13 用作原料的数量情况的审议，执行委员会似宜考虑核准为中国清洗行业计划 2004 年度执行方案供资 5 555 000 美元，并为开发计划署提供 416 625 美元的支助费用。

CHINA CFC PRODUCTION PHASE-OUT PROGRAM
2003 VERIFICATION REPORT
FEBRUARY 20, 2004
Revised Feb 27,2004

Inspection Team

F.A. Vogelsberg: Mission Leader and primary text preparation - Annex I
Hua Zhangxi (HZX): Data Summary - Annex II (Gradual Closure) and Annex III (Complete Closure in 2003)
Wu Ning: Financial Verification of CFC Production for China in 2003- Annex-IV

Assisted and Accompanied By

Cui Lei: State Environmental Protection Administration (SEPA)

Inspection Mission Time Frame

February 1 - 14, 2004

Plants Covered in Visitation Order

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

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

Report Format and Contents

- Verification conclusions for CFC Production in China for 2003.
- Annex I - Text covering details of technical effort by Vogelsberg and Hua at six CFC Enterprises visited and inspected.
- Annex II - CFC production verification tables for gradual closure at six Enterprises.
- Annex III - Details of complete closure of two Enterprises that ceased CFC production by year end 2002 and inspected during 2003 mission.
- Annex IV - Financial verification of CFC Production for China in 2003

Verification Conclusions with respect to China's CFC Production in 2003

There were two complete closure projects in China CFC Production Sector 2003. The closure projects were Guangdong Xiansheng Chemical Co.Ltd. (SRI# A 13, CFC-12) and Zhejiang Linhai Limin Chemical Plant (SRI# B 8, CFC-12, but the CFC-13 production line remains).Therefore, there were six enterprises producing CFC products in China 2003. The verified overall national production of CFCs in 2003 is 29,985.71 tonnes (ODP) vs their issued quota of 29,998 tonnes, or 12.29 tonnes under their issued quota. The following table is the breakdown by type of product.

Type of CFC Product	Number of Producers	Total Production (tonnes)	
		ODS	ODP
CFC-11	3	13,828.38	13,828.38
CFC-12	4	14,249.10	14,249.10
CFC-13	1	21.28	21.28
CFC-113	1	2,124.92	1,699.94
CFC-114	1	0.00	0.00
CFC-115	2	311.69	187.01
Overall National			29,985.71

In our report of 2002 production we raised concerns about the large amount of "in-process" stocks as well as the closeness of production to allowed quotas at some enterprises. In response the MLF secretariat referred to these comments in the PROJECT DESCRIPTION paragraph 4.1 in UNEP/OzL.Pro/EX Com/39/30. Based on this document, SEPA issued a formal notice to all CFC producers informing them that they should keep their records showing beginning and ending "in-process" stocks so they can be inspected by those verifying annual data. Furthermore any increase of "in-process" stocks are to be included in the year's production. We are pleased to report that this directive has generally been well complied with

The total consumption of CTC for the production of 13,828.38 tonnes of CFC-11 product is 16,554.75 tonnes; and the overall average CTC/ CFC-11 ratio is 1.197 (theoretical 1.12). Among the three CFC-11 producers, the producer that had the lowest CTC/ CFC-11 ratio (1.178) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest ratio (1.240) is Jiangsu Meilan Electro-chemical Plant (SRI# A 8).

The total consumption of HF for the production of 13,828.38 tonnes of CFC-11 product is 2,197.82 tonnes; and the overall average HF/ CFC-11 ratio is 0.159 (theoretical 0.145). Among the three CFC-11 producers, the producer that had the lowest HF/ CFC-11 ratio (0.156) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest ratio (0.178) is Jiangsu Meilan Electro-chemical Plant (SRI# A 8).

The total consumption of CTC for the production of 14,249.10 tonnes of CFC-12 product is 19,581.88 tonnes; and the overall average CTC/ CFC-12 ratio is 1.374 (theoretical 1.272). Among the four CFC-12 producers, the producer that had the lowest CTC/ CFC-12 ratio (1.333) is Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10); and the highest (1.396) is Zhejiang Juhua Fluoro-chemical Co. Ltd. (SRI# A 10) as well as Zhejiang Dongyang Chemical Plant (SRI# B 12).

The total consumption of HF for the production of 14,249.10 tonnes of CFC-12 product is 5,566.47 tonnes; and the overall average HF/ CFC-12 ratio is 0.391 (theoretical 0.331). Among the four CFC-12 producers, the producer that has the lowest HF/ CFC-12 ratio (0.367) is Zhejiang Juhua Fluoro-chemical Co. Ltd. (SRI # B 14) and the highest (0.417) are Jiangsu Changshu 3F Refrigerant Co. Ltd. (SRI# A 10) as well as Jiangsu Meilan Electro-chemical Plant (SRI# A 8).

A detailed summary of China CFC production in 2003 is attached in the next page.

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

The enterprises have continued to provide production experts that are paid for by SEPA to audit daily operation at the major plants. While we did not directly interface with these people during our Mission we understood from our SEPA representative that they are still very satisfied with this arrangement.

The complete closure of one CFC-12 production line of Guangdong Xiansheng Chemical Co. Ltd. (SRI# A 13) and two CFC-12 production lines of Zhejiang Linhai Limin Chemical Plant (SRI# B 8) as specified in " China CFC Production Sector Plan and the Annual Program 2003" was verified in January 2003 and the verification report is attached as Annex III of this Report.

SUMMARY OF CHINA CFC PRODUCTION IN 2003

CFC-11

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CTC Cons'ption	HF Cons'ption	Ratio CTC/ CFC-11	Ratio HF/ CFC-11
A 8	Jiangsu Meilan Electro-chemical Plant	997. 14	997. 14	1, 236. 59	177. 18	1. 240	0. 178
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	8, 883. 75	8, 883. 75	10, 465. 13	1, 383. 81	1. 178	0. 156
B 14	Zhejiang Juhua Fluoro-chemical Co. Ltd.	3, 947. 49	3, 947. 49	4, 853. 03	636. 83	1. 229	0. 161
	Overall	13, 828. 38	13, 828. 38	16, 554. 75	2, 197. 82	1. 197	0. 159

CFC-12

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CTC Cons'ption	HF Cons'ption	Ratio CTC/ CFC-12	Ratio HF/ CFC-12
A 8	Jiangsu Meilan Electro-chemical Plant	1, 066. 03	1, 066. 03	1, 456. 03	444. 20	1. 366	0. 417
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	4, 334. 82	4, 334. 82	5, 776. 53	1, 805. 70	1. 333	0. 417
B 12	Zhejiang Dongyang Chemical Plant	1, 442. 22	1, 442. 22	2, 012. 89	600. 47	1. 396	0. 416
B 14	Zhejiang Juhua Fluoro-chemical Co. Ltd.	7, 406. 03	7, 406. 03	10, 336. 43	2, 716. 10	1. 396	0. 367
	Overall	14, 249. 10	14, 249. 10	19, 581. 88	5, 566. 47	1. 374	0. 391

CFC-13

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-12 Cons'ption	Ratio CFC-12/CFC-13
B 8	Zhejiang Linhai Limin Chemical Plant	21. 28	21. 28	55. 01	2. 726

CFC-113

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	PCE Cons'ption	HF Cons'ption	Ratio PCE/ CFC-113	Ratio HF/ CFC-113
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	2, 124. 92	1, 699. 93	2, 183. 05	961.60	1. 027	0. 453

CFC-114*

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-113 Cons'ption	HF Cons'ption	Ratio CFC-113/ CFC-114	Ratio HF/ CFC-114
B-11	Zhejiang Chemical Research Institute	-	-	-	-		

CFC-115

SRI #	Name of Enterprise	Production (ODS)	Production (ODP)	CFC-113 Cons'ption	HF Cons'ption	Ratio CFC-113/ CFC-115	Ratio HF/ CFC-115
A 10	Jiangsu Changsu 3F Refrigerant Co. Ltd.	179. 85	107. 91	300. 75	114. 56	1. 672	0. 637
B-11	Zhejiang Chemical Research Institute	131. 84	79. 10	178. 00	48. 51	1. 350	0. 368
	Overall	311. 69	187. 01	478. 75	163. 07	1. 536	0. 523

* Zhejiang Chemical Research Institute (SRI# B1) had no CFC-114 production in 2003, due to market condition.

ANNEX I

Tuesday, February 3, 2004 - Zhejiang Juhua Fluoro-chemical Co. LTD

12,000 TPA CFC-11/CFC-12
15,000 TPA AHF (same as prior report year)
70,000 TPA Chloromethanes - nominal 20,000 TPA CTC (same as last year's reported capacity)

General

Our last team visit to Juhua was January 23, 2003. No changes to their CFC, HCFC-22 or Chloromethane plants since last year's report. Juhua created Excel spreadsheets for the year 2003 to record and total daily CFC-11/12 production as well as all raw material consumption figures; making reconciliation much easier for the verification team.

Verification of Year 2003 Data for CFC-11/12

Linhai Limin ceased CFC-12 production at year-end 2002 and now purchase CFC-12 from Juhua for conversion to CFC-13. It also is important to note that Linhai was required by SEPA to reduce CFC-13 production in 2003 by 20% from the 27.0MT base line average for 1998-2000; or a 5.7MT reduction to 21.3MT. Since CFC-13 and CFC-12 have the same ODP this 5.7MT was transferred to Juhua (as an increase in their CFC-12 quota for 2003. This is allowable since China can shift production of specific CFCs to meet their needs as long as their ODP quota remains under their quota) The nominal ratio of CFC-12 to CFC-13 is about 2.7 hence Juhua's quota for CFC-12 was increased by 58MT to accommodate Linhai's transformation of CFC-12 to CFC-13. Therefore, Juhua's year 2003 CFC-11 and CFC-12 quota was increased from 11,349MT to 11,412.7MT (11,349+5.7+58). Juhua's 2003 total CFC-11/12 production was 11,411.5MT, within 1.2MT of their official quota.

Total CFC-11/12 plant operating days were 345 in 2003 up from 319 days in 2002; an exceptionally high plant in-time of 94.5% for this type of process. We noted that they report 37 operating days in the February accounting period, because as a state owned enterprise they were required to cut-off January month-end on January 20, to accommodate China's New Year Festival. The net result was to add these days to the February accounting period. The other three fluorocarbon enterprises in Zhejiang Province did not follow this directive since they are not fully state owned and could deviate from this state directive.

In reconciling CFC-12 monthly production figures it was necessary to back-out transfers (sales) to Linhai Limin to arrive at the official reported CFC-12 production as ODS, since this quantity was for transformation to CFC-13 by Linhai Limin.

All CFC-11 and CFC-12 daily production figures were verified as correct (against the Excel sheets) for all 12 operating months.

All CTC and AHF daily transfers to the CFC-11/12 plants were verified for each month (against the Excel spread sheets) and found to be accurate. As reported in the past, the split of CTC and AHF between CFC-11 and CFC-12 production is a calculated figure, based on molar ratios.

Readers of our past reports will have noted our concern of the large "in process" inventory reported by Juhua at month end and year-end. In November of 2002, they only operated the production unit for ten days so "in-process" material could be packaged.

Past report readers will also recall that Juhua's monthly production figures only included packaged goods (drums, DACs, cylinders and tank trucks), and excluded large quantities of bulk not yet packaged.

At SEPA's request, Juhua changed their production accounting from packaged goods only to packaged goods plus finished product in bulk; thereby essentially eliminating "in-process". For this reason the

official 2003 production figures were reconciled by verifying product transferred from the production plant to the shipping warehouse, and then cross-checked by comparing to raw material consumption and product sales, adjusted for year end inventory changes. Wu Ning verified the sales figures with the plant's accounting records. Wu Ning noted the Juhua coded 351MT of direct CFC-12 sales to offshore customers as domestic rather than export. This adjustment increased exports to 2086MT and decreased domestic sales to 459MT.

We attempted to reconcile monthly production by examining daily packaging logs, as in the past, but realized that this now becomes a formidable task that would require a sizeable spread sheet to accurately account for the large number of packages and sizes. For example in March they filled 654 cylinders varying in size from 450kg, 550kg, 900kg, and 1100kg as well as 28,772 DACs that were primarily 13.6kg but intermixed with some 12.0kg and 9.6kg units. Our reconciliation of these filling records was very close to reported values, but slightly lower and we recognized the manual entry into a simple calculator was prone to entry errors in such a compressed time frame. Juhua fills DACs and cylinders two shifts, seven days per week; keeping separate records for filling of owned cylinders and customer's cylinders. Shift logs for DACs and the cylinder shift logs flow to a monthly packaged goods summary that includes any bulk tank truck movements in the monthly period. As in the past, all records are very detailed, dated and signed by all people involved in the activity.

Juhua's CFC-11 sales, export and domestic were lower in 2003 vs. 2002; while CFC-12 exports were larger and domestic sales were lower than 2002. Juhua's CFC-11/12 finished product inventories at year-end 2003 were up by 1,310MT over 2002.

We are satisfied that the 2003 data reported by Juhua is accurate and they remain in compliance with their CFC production commitments.

Wednesday, February 4 - Zhejiang Dongyang Chemical Plant

5,000 TPA CFC-12
8,000 TPA HCFC-22
20,000 TPA AHF

General

This is the team's fifth visit to Dongyang Chemical for production verification. The prior visit was January 22, 2003. There were no significant changes at the site.

Verification of Year 2003 Data

This site is one of the easiest to verify data due to the plant's configuration, a single CFC product, plus good records that are readily crosschecked.

All daily CFC-12 production transfer slips for movement to the warehouse and all monthly transfer slips were examined and found to be correct. All DAC and cylinder filling records were examined for each day and each month and crosschecked against the production transfer slips. All these data were correct.

The AHF/CTC warehouse supervisor maintains a bound notebook record for CTC, showing starting inventory, purchases, daily transfers to the CFC-12 unit (by level change in the bulk tank) and ending inventory. From this book, they generate a daily raw material and CFC-12 production report. A monthly report is prepared from the daily reports, showing daily and cumulative figures.

AHF is transferred via a level tank that is 1320kg in size so that daily and monthly AHF values are very easily justified against their paper records. All CTC and AHF records were found to be 100% accurate and supporting official CFC-12 production for 2003.

We noted that Dongyang operated 319 days in2003 vs. only 239 days in 2002; yet produced only 83% of 2002 production of 1442MT or 29% of the plants 5,000MT capacity. They explained that the region is critically short of electrical power and the plant's refrigeration equipment is their major power consumer. They can hold their average power load to an acceptable level by operating their fluorocarbon plants at consistent low rates rather than create high peak months, if they were to idle the plant for several month and then run at a high rate to produce their production quota.

In addition, the demand for aqueous HCl by-product is rather weak and operation of CFC-12 at high rates would oversupply the local market.

Dongyang's CFC-12 exports were 801MT, a significant increase over the 455MT in 2002, while their domestic sales declined slightly. Dongyang exports significant quantities of HCFC-22 and their Article 5.1 customers have asked for increased CFC-12 supplies claiming shortage from other traditional sources. All exports are direct and do not involve a local trading company. All exports were licensed by SEPA and all paperwork was in order.

The Team is fully satisfied with the verification effort for 2003 data.

Thursday. February 5 - Zhejiang Linhai Limin Chemical Plant

100 TPA CFC-13
15,000 TPA HCFC-22

General

The team's last (fourth time) verification of this Enterprise was January 20 and 21, 2003, which included verification of shutdown and dismantlement of their CFC-12 unit. Linhai Limin have plans to double HCFC-22 capacity to 30,000 TPA by the end of 2004.

Verification of CFC-13 Data

As mentioned in the preceding pages concerning Juhua, Linhai Limin were required to reduce CFC-13 production by 20% in 2003 from 27MT to 21.3MT. In addition, they now purchase CFC-12 feedstock from Juhua, which is nominally 58.01MT using the plant's typical ratio of 2.7kg of CFC-12/1.0kg of CFC-13.

To ensure that Juhua does not exceed their CFC ODS quota it was agreed at the start of 2003 that Linhai Limin would complete their year's CFC-13 operation by end of October so there would be time to determine if the full 58.01MT of CFC-12 would be utilized as feedstock. If the CFC-13 unit operated more efficiently there could be some unused CFC-12 since Linhai Limin could not exceed their 21.3MT CFC-13 quota. In this case, Juhua would have to adjust their 2003 quota by any unused CFC-12 as the unused would be classed as ODS, not feedstock.

Linhai Limin started 2003 CFC-13 production in February and terminated the year's campaign in mid October with a yearly total of 20.99MT or 0.31MT short of their quota. China's Space agency declared and emergency need for CFC-13; hence Linhai Limin restarted their plant and produced 0.29MT of CFC-13 utilizing the 1.35MT of unused CFC-12 feedstock.

The above restart, as well as the initial plant start-up in February 2003 resulted in two very poor months of CFC-12/CFC-13 ratios since there are substantial losses when the plant is restarted after total shutdown and evacuation. Linhai Limin exported CFC-13 in 2003 for the first time in our verification; 210kg to Israel.

We are fully satisfied that Linhai Limin's 2003 CFC-13 data is accurate as reported.

Friday, February 6 - Zhejiang Chemical Industry Research (ZCRI)Institute

150 TPA CFC-114/115

General

ZCRI continues to have a large CFC-114 stock and very low sales, hence they did not produce additional materials in 2003. They shifted their CFC-114 quota to
CFC-115 giving them a CFC-115 quota of 83 ODP tonnes or 138.3 ODS tonnes of CFC-115.

Verification of year 2003 CFC-115 Data

They only operated seven months, starting in May and ending in December. The hot summer months led to more frequent power interruptions causing them to fall short of their CFC-115 quota. The warmer weather also caused slightly lower CFC-113 and AHF yield to CFC-115, but still well within historical performance.

Cylinder filling records were kept in a bound notebook and provide excellent easy to follow detail on each cylinder filling; including; date, cylinder sequence number, cylinder identity number, product grade/purity, date sampled/date accepted by warehouse, tare weight, starting cylinder weight (any heel adds to tare but is not new production), gross weight, net weight and cumulative net weights (new production).

The cylinder filling entries were found to be accurate. Transfer slips to cover movement of production to the warehouse cross checked the cylinder filling records.

Transfer records for raw material consumption were checked and found to be correct as reported.

In 2002, ZCRI used some by-product CFC-113a as feedstock for CFC-115. However, in 2003 all CFC-113a was consumed in pesticide manufacture.

Reactor log sheets were examined and found to reflect reported operating days and production rates. In 2002, ZCRI operated 201 total days, but only 156 days on CFC-115. The balance was for CFC-114.

In 2003 they operated 221 days since they produced considerable more CFC-115 than in 2002, 131.8MT in 2003 vs. 90MT in 2002.

ZCRI's closing CFC-114 stock of 31.4MT is almost a ten-year supply at current low market demand. Their only export was 1MT to the United Arab Emirates.

The verification Team was fully satisfied with ZCRI's records, which support their reported 2003 CFC-115 production.

Sunday/Monday – February 8-9 – Jiangsu Changsu 3F Refrigerant Co. LTD

10,000 TPA CFC-11
5,000 TPA CFC-12
4,000 TPA CFC-113
400 TPA CFC-115

General

In last year's report, which covered our January 25-26, 2003 visit, we highlighted the importance of not operating so close to their quota limit and that they must maintain records showing "in-process" stocks and such stocks should be minimized. The MLF secretariat referred to these comments in the PROJECT DESCRIPTION paragraph 4.1 in UNEP/OzL. Pro/EX Com/39/30. Based upon this document, SEPA has issued a formal notice to all CFC producers informing them that they should keep their records showing beginning and ending "in-process" stocks so they can be inspected by those verifying their data. Furthermore any increase of "in-process" stocks is to be included in year's reported production.

Readers of this year's report will also recognize that total CFC-113 generated by 3F for ODS plus non-ODS uses exceeds their stated 4,000MT capacity. In 2003, 3F constructed a new CFC-113 unit (capacity not disclosed) that is integrated into their new Chlorotetrafluoroethylene (CTFE) polymer and new CFC-113a pesticide intermediate plants. They intend to dismantle their older CFC-113 unit in mid 2005 when they must cease production of CFC-113 for non-feedstock applications.

Verification of Year 2003 CFC Production

As at all plants Wu Ning conducted his financial review in parallel with verification of plant production records by Messers Vogelsberg, Hua and Cui (SEPA).

CFC-113

3F produces CFC-113 for; merchant sales (as ODS), Zhejiang Chemical Research Institute (ZCRI) for conversion to CFC-114/115, internal conversion toCFC-115, feedstock for internal CTFE polymer and to

CFC-113a as an intermediate for pesticide manufacturing.

3F operated 11 months or 354 days, and produced 2124.92MT as ODS (equivalent to 1,699.94 ODP tonnes) vs. its ODS quota of 2125MT(equivalent to 1,700 ODP tonnes). This figure is exclusive of 2,661 MT of CFC-113 (as ODS) that was transformed by 3F and ZCRI to CFC-115 and other non-ODS products. Because the Fluoropolymer and pesticide business is quite competitive in China, 3F have asked the verification team to respect their commercial concerns and not disclose the specific amounts of CFC-113 that are transformed into CTFE or pesticides made from CFC-113a. We have access to all these data and are fully satisfied that all CFC-113 not reported as ODS production was indeed transformed to non-ODS materials. This is one of the areas where the outside inspectors from other Enterprises are helpful as they provide another level of assurance beyond just examining data.

Their CFC-113 production records are excellent and easily verified, utilizing a bound notebook for daily- production and raw material consumptions. Daily transfer slips document transfers between the production unit and the raw material storages (PCE and AHF) and finished product warehouse. All daily and monthly figures were verified as correct and reasonable.

There are three shift tanks to receive distilled new production of CFC-113. At the end of 2002, all three tanks were empty and at the end of 2003 two were empty and one at 5 units @45kg/unit or 225kg of "in-process" material. This makes 3F technically 100kg over their CFC-113 agreed production quota; more on this later in the text.

The PCE is transferred via pipeline to a weigh tank. The PCE transfers are entered into a bound notebook, then to a monthly production record. A PCE transfer slip is also generated as additional documentation.

AHF is transferred via pipeline to a weigh tank each shift; so three AHF transfer slips are generated each operating day. The shift figures are noted on a daily report of consumption and production. The bound notebook has a column showing cumulative figures for the month making verification very easy.

CFC-113 transfers to the CFC-115 plant are via bulk tank in the warehouse to the CFC-115 plant weigh tank. At month-end they make a paper transfer of unused CFC-113 back to the CFC-113 warehouse. The years starting and ending CFC-113 inventory in the CFC-115 plant were zero. All figures were correct.

We next examined CFC-113 transfers to non ODS CTFE and CFC-113a manufacture. These transfers are also recorded in a bound notebook showing daily and cumulative quantities. A daily transfer slip is produced, we verified daily and monthly transfer figures to CTFE and CFC-113a as correct. CTFE operated 12 month while CFC-113a operated 8 months, March – October.

CFC-115 Verification

CFC-115 cylinders are typically filled to exact weights, primarily 400kg, making counting and verification easy. 3F does not evacuate the returned cylinders or account for any heel that may be present, since almost all CFC-115 is used internally to blend with HCFC-22 to produce R-502. Since they do not re-tare cylinders before filling, they are likely shorting themselves by a couple of metric tonnes against their production quota, since they count the cylinders net weight as gross weight minus a completely empty tare weight.

They produced 179.85MT of CFC-115 vs. their180MT quota (equivalent to 107.91 and 108 ODP tonnes respectively) by operating 221 days in a nine-month period from mid February to mid October. No in-process CFC-115 remained at year-end.

CFC-113 to CFC-115 verification has already been covered above. AHF to CFC-115 is via cylinders, and AHF use records are in a bound notebook showing daily and cumulative quantities. As in other activities, they generate a daily AHF transfer slip. All figures for raw material use (CFC-113 and AHF) were verified as accurate.

CFC-11 Verification

Verified monthly production as accurately reported vs daily drum and cylinder filling and transfer records. Both the CFC-11 and CFC-12 plants were shutdown for maintenance before year end 2003,

hence “in-process” inventory is not an issue as it was in 2002.

As with all materials on this site transfer slips are generated by the sending department and the receiving department. The daily figures are recorded and totaled month to date by the accountant for each product in a bound notebook. We verified CTC and AHF transfer slips against the bound notebook entries, and found monthly totals correctly reported.

CTC is received via pipeline into one of two level tanks which in turn feed to the four reactor feed tanks; thus providing a mechanism for accurate CTC measurement.

AHF is received via pipeline into a similar set of two weigh tanks that feed to four shift feed weigh tanks.

The CFC-11 plant operated 314 days over eleven month from January to mid November producing 8883.75 MT vs their 8884MT quota. The plant operating hours are noted in the accounting notebook and reflect hours the feeds are going to at lease one reactor.

CFC-12 Verification

CFC-12 operated 345 days over twelve months from January to the last week in December, producing 4334.82MT vs. their 4335MT quota.

The CTC, AHF and CFC-12 transfer slips are identical to the CFC-11 plant and were verified against the accounting bound notebook record. All monthly CTC, AHF and CFC-12 data were found to be accurate as reported. We did note a mistake in the notebook cumulative total in the month of September but is was corrected 6 days later by adjusting the monthly total. There were several confusing entries in the AHF notebook, primarily because daily transfer slips were dated wrong or out of sequence. All of these items were justified with 3F’s accounting help.

We are satisfied that CFC-12 production was accurately reported for each month and the year.

Summarizing Remarks

Changshu 3F realize they must count the 225kg of “in-process” CFC-113 (real weight but equivalent to 180kg ODP) in their 2003 production. However, since the formality for changing their financial record would be very difficult they prefer to include this amount against their 2004 quota.

While overall CFC production at Changshu 3F in 2003 is very close to their combined quota of all CFC’s but does not exceed this value, we believe it is best to avoid changing the financial records and to shift this 225kg to their 2004 quota of CFC-113. This sends a message to 3F that they could be penalized in subsequent years if they do not properly account for any unpackaged production; so called “in-process” material. While Changshu 3F made some improvement in their margin vs. quota (from 0.4 ODP MT in 2002 to 0.584 ODP MT in 2003) we still maintain that operating so close to their maximum quota creates an unacceptable risk of violating its and China’s obligation with the MLF.

We had 3F explain how they approach year-end without over shooting their quota. Using the CFC-12 plant as an example, there are eight main equipment pieces between the CTC and AHF feed tanks and the final product receivers. Experience has demonstrated that once they stop CTC/AHF feeds that the process inventory is about 1MT and they assume it will all convert to CFC-12. Once the reactor is shut down they evacuate the system, drain the heavy residues for incineration and dispose of the old catalyst. They aim to finish the yearly production 1MT short of their quota.

We accept that the above claim possible but represents some risk to the Enterprise since any failure of their control and instruments could cause them to exceed their quota.

Tuesday/Wednesday February 10-11 – Jiangsu Meilan Electro-chemical Co. LTD

3,000 TPA CFC-11
3,000 TPA CFC-12
40,000 TPA HCFC-22
16,000 TPA AHF
70,000 TPA Chloromethanes

General

Since our last verification visit January 27, 2003, Meilan have doubled their HCFC-22 capacity to 40,000MT by building a new 20,000MT plant. This compliments their two-10,000MT units,one using old technology the other using same technology as their newest plant. Expansion is primarily for refrigeration market though they are one of six producers of PTFE in China.

Verification of 2003 Production Data

CFC-11

They only produced CFC-11 four months, March, and October through December, operating only 81 days producing 997MT vs. their quota of 1,000MT.

Based on prior year's experience we used the CFC-11 plant's distillation (shift) log sheets as the primary verification tool, adding each shifts production for each month. We found the log sheet figures matched reported production accurately. We cross- checked transfer slips from production to the warehouse and all matched reported production. We also checked drum filling records, which are recorded in a bound notebook. All drums are 250kg making accounting very easy. Month drum filling records must be adjusted for starting and ending bulk inventory to get actual new monthly production. All of these figures matched production transfer slips.

CTC is transferred via pipeline to two day tanks and then to two sets of feed tanks to be used for either CFC-11 or CFC-12 production. A transfer slip is generated for each transfer. A paper transfer back to the CTC storage warehouse occurs at month-end and is reversed at the beginning of the next month. Thus, the net transfer figure is the CTC consumed quantity for the month. All transfers are exact increments of 6.66MT, making verification very easy. Monthly reported CTC transfers and consumptions were verified as reported.

AHF is transferred via pipeline to a weigh tank then to the process. A transfer slip is created for each transfer. All monthly transfers were correct. These figures represent AHF consumption since the values are the weights of AHF used from the process feed weigh tanks.

2003 CFC-11 domestic sales were 532MT vs. 995MT in 2002.

CFC-12

As reported before, Meilan package all CFC-12 into cylinders, no tank trucks and no DACs. The cylinders are filled to exact net weight, primarily 450, 500, 1,00 and 1100 kg in size. l Cylinder filling activity is recorded on a detailed filling log sheet. Monthly cylinder filling figures are adjusted for starting and ending bulk inventory to arrive at monthly production.

We checked all daily cylinder filling log sheets and verified each month's cylinder filling figures to be correct as reported for a yearly total of 1,066.03MT vs. their 1068MT quota. Year 2003 starting bulk was 126.806MT, ending bulk was 196.164MT and 993.408MT of CFC-12 was put into cylinders in 2003. While they only operated nine months or 169 days, they filled cylinders every month in 2003.

All exported CFC-12 was in returnable cylinders, 184.8MT in 2003 vs. 105MT in 2002. As at most enterprises their domestic sales were lower in 2003 vs. 2002, 814MT vs. 1141 respectively. As discussed above, CTC transfers and consumption figures are handled the same for CFC-12 and CFC-11. All monthly CTC transfers and consumption figures were verified as correct for each operating month.

As discussed in the CFC-11 sections, AHF transfers are handled the same as for CFC-12 and CFC-11. All monthly AHF transfer and consumption figures were verified as correct for each of the nine operating months.

It is notable that Meilan, which have smaller CFC-11 and CFC-12 production units than 3F stop their production 2-3MT short of their annual quota. We asked what their reaction/distillation systems hold up was and they replied that they do not feel they can reliably predict or calculate how

much actual production will occur once raw material feeds are stopped; for this reason they terminate CTC and AHF feeds earlier than necessary if they tried to make their entire quota.

Our verification team is fully satisfied with the records and procedures used by Meilan and feel that it is one of the easiest plants to work with.

Annex III
CHINA CFC PRODUCTION SECTOR
COMPLETE CLOSURE PROJECT 2003
VERIFICATION REPORT

In accordance with China CFC Production Sector Plan and the Annual Program 2003, three CFC production units in two corresponding China enterprises have been closed. The enterprises are:

A 13	Guangdong Xiansheng Chemical Co. Ltd.	1 CFC-12 unit
B 8	Zhejiang Linhai Limin Chemical Plant	2 CFC-12 units

In January of 2003, A World Bank Verification Team, consisting of Messrs. F. A. Vogelsberg, consultant, Hua Zhangxi, consultant, and Wu Ning, financial analyst, conducted verification of the production of CFCs by the seven enterprises in China, in which the above mentioned two enterprises with closure projects are included. When the Verification Team arrived at the plantsites, the management of the enterprises reported to the Verification Team that they had dismantled their CFC 12 production units in accordance with the closure contract signed between the concerning enterprises and SEPA. Following verification of 2002 production the Verification Team inspected records and physical site of the former plant to assure that all work required for complete closure was done at the respective enterprise.

The results of inspection are as follows:

Friday/Saturday January 17, 18 – Guangdong Xiansheng Chemical Co. Ltd

3000 TPA CFC-12

(i) Plant Closure

Last CFC production was December 26, 2002. Plant dismantlement started December 28th and was completed by January 2, 2003. Work was done by plant personnel,, witnessed by SEPA and local EPB officials. All equipment were removed from the process building and destroyed so it could not be reused. The three large 300 MT (each 7 m^3 ø) CTC storage tanks were emptied and holes cut in the tank sides. The two-day CFC-12 receivers and large CFC-12 storage tanks were emptied and holes cut in them. The plants 770MT of CFC-12 inventory has all been stored in one and ½ tonne cylinders. At 2002 sales rate, this inventory could exceed 3 years sales from this enterprise.

Total plant employment was 40 persons; eighteen were terminated at the end of 2002 and compensated one-year's salary, plus one additional month's salary for each year's service. The remaining 22 will stay on for the foreseeable future. We viewed video made during the plant dismantlement and took a complete set of photographs to document the current dismantled state.

The Verification Team found that the certificate issued by the local environment authority certifying the witnessing of dismantlement of the CFC production unit and the destruction of the critical equipment was not available. The enterprise management promised to urge the local environment authority, Guangdong Zengcheng City Environment Protection Bureau to issue the document. On March 25, 2003 this certificate was issued and submitted to SEPA. The Verification Team has the certificate and is ready to submit the complete closure report for this enterprise.

Monday/Tuesday January 20-21 – Zhejiang Linhai Limin Chemical Plant

3,000TPA CFC-112 (2 Reactors; only one operating at a given time)

100 TPA CFC-13

15,000 TPA HCFC-22 (prior reported capacity was 10,000 TPA)

Plant Closure

The last CFC-12 production for this site was December 22. Plant dismantlement was done by plant forces assisted by a rented hoist, from January 2 through January 5. Twenty (20) MT of scrap metal was sold for 19,600RMB. They destroyed one of two raw gasholders, two CFC-12 reactors, product receivers, distillation columns, distillation re-boilers, as well as piping and controls.

All plant personnel associated with CFC-12 production will remain employed in continuing and expanding activity on this site. While we were examining the former CFC-12 building they were installing glass- lined vessels in the vacant space as part of a new, fine chemical facility now under construction.

The two original CFC-12 reactors were integrated into the two HCFC-22 buildings and CFC-12 refining was a separate structure. Photos were taken to show where the removed CFC-12 equipment had been housed.

The dismantlement was viewed by SEPA and the local EPB officials and fully recorded on video and still photographs, which we examined. Certificate for witnessing the dismantlement of the two CFC 12 production units and destruction of their critical equipment was issued by the Zhejiang Linhai City Environment Protection Bureau. The Verification Team has the certificate.

CTC was stored in one of 3 – 300MT bulk tanks (two were chloroform service). The CTC tank has been put into chloroform service. Remaining CTC has since been sold.

Based upon the inspection and examination of all information as well as the observation on field sites, the Verification Team concluded that **a**ll the three CFC-12 production units in the two corresponding enterprises have been closed completely. The dismantling and disposal of key equipment meets the requirement specified in the Agreement. All the evidence as well as the remaining plant sites have been reviewed and inspected by the Verification Team. Those two enterprises will not be able to resume CFC production.

The closure questionnaires have been filled-out in accordance with Section A, B .C and D1 of the "Guidelines and Standard Format for Verification of ODS Production Phase-out" for the above-mentioned two enterprises are attached below.

Annex IV

Financial Verification
of
CFC production in China in 2003

1. From February 1st to 14th, 2004, I joined a mission comprising Messrs. Tony Vogelsberg (team leader/technical expert) and Hua Zhangxi (HZX, technical expert) to carry out the verification of CFC production in China in 2003 in accordance with the CFC Production Sector 2003 annual programme. The mission was accompanied by the representative from State Environmental Protection Agency (SEPA). The mission visited the following plants/company/institute:

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

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

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

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

4. Like the verification in 2003, this verification exercise was conducted ahead of the annual national audit of the CFC production sector by China National Audit Office (CNAO). The mission had no CNAO's documentation and reporting as reference to follow. Therefore, I checked necessary financial records and the original documents covering the following aspects:

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

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

6. The findings of my verification were summarized as follows:

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

7. Zhejiang Juhua Fluoro-Chemical Co. Ltd. (Juhua) produced CFC 11 and CFC 12 in 2003. By

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

the end of each month, CFC 11 and CFC 12 production unit in Juhua submitted its monthly *Raw Material Consumption Calculation Report* to the accounting office of Juhua. This report provided the information for CFC 11 and CFC 12 production, beginning stock of AHF and CCL_4, consumption of AHF and CCL_4 by CFC 11 and CFC 12, and end stock of AHF and CCL_4. This report is a summary of daily production activities in the current month which are reflected in other separate sheets and slips forming the base of accounting records. During the verification, the data in the report were reconciled with Juhua's accounting records and the questionnaire submitted to SEPA by Juhua before the verification. It is satisfactory that the accounting records reflect the production of CFC 11 and CFC 12 in Juhua, which are presented in the following table:

CFC 11 and CFC 12 Productions by Juhua in 2003

CFC 11	CFC 12		
		Produced as Commodity	Procured as Feedstock for Linhai
3,947.486 Tonnes	7,464.042 Tonnes	7,406.029 Tonnes	58.013 Tonnes

8. CFC 12 produced for Linhai as feedstock was verified in Zhejiang Linhai Limin Chemical Plant (Linhai).

9. In 2003, CFC 11 and CFC 12 produced by Juhua was sold in domestic market and exported to Iran, Indonesia, Malaysia, Singapore, and United Arab Emirates for CFC 11 and Indonesia, Saudi Arabia, Turkey, Vietnam, Malaysia, Thailand, Russia*, United Arab Emirates, Bengal, Philippines, and Egypt for CFC 12. The exports of CFC 11 and CFC 12 were through a trading company and Juhua itself. All exports were licensed by the State Office for Import and Export Management of Substances Depleting the Ozone Layer in Beijing.

10. Juhua produced all CTC for its production in 2003 while it produced and purchased AHF. In 2003, Juhua produced 16,203.74 Tonnes of CTC and 94% was transferred to CFC 11 and CFC 12 production unit. The verified accounting records for CTC and AHF consumed by CFC 11 and CFC 12 production, which are consistent with the questionnaire submitted to SEPA by Juhua for verification, are shown in the following table:

CTC and AHF Consumed by CFC 11 and CFC 12 Productions in Juhua in 2003

Consumed by	CTC	AHF
CFC 11	4,853.032 Tonnes	636.829 Tonnes
CFC 12	10,417.350 Tonnes	2,737.422 Tonnes
Total	15,270.382 Tonnes	3,374.251 Tonnes

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

11. Zhejiang Dongyang Chemical Plant (Dongyang) produced CFC 12 in 2003. CFC 12 production unit in Dongyang submitted its *Monthly Report of Production and Material Consumption* to the accounting office by the end of each month. This report summarized the information of production of CFC 12 and consumption of CTC and AHF consumed by CFC 12. This report also recorded the number of days and the beginning and end stocks of AHF remaining in CFC 12 production unit. During the verification, the accounting records were reconciled with this report and the results are satisfactory. The total production of CFC 12 and its sales in 2003 are presented in the following table:

CFC 12 Production and Sales by Dongyang in 2003

Product	Production	Sales		
			Domestic	Overseas
CFC 12	1,442.218 Tonnes	1,755.838 Tonnes	954.75 Tonnes	801.088 Tonnes

* For MDIs only.

12. The overseas markets of CFC 12 produced by Dongyang in 2003 were Saudi Arabia, Bengal, United Arab Emirates, Philippines, Thailand, Indonesia, Iran, and Vietnam. The exports of CFC 12 were made by Dongyang itself. All exports were licensed by the State Office for Import and Export Management of Substances Depleting the Ozone Layer in Beijing. Each shipment had its separate license.

13. Dongyang in 2003 purchased CTC and produced AHF for its production of CFC 12. The verified volumes of CTC and AHF consumed by CFC 12 production was shown in the following table:

CTC and AHF Consumed by CFC 12 in Dongyang in 2003

Consumed by CFC 12	CTC	AHF
	2,012.893 Tonnes	600.472 Tonnes

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

14. Zhejiang Linhai Limin Chemical Plant (Linhai) produced CFC 13 in 2003. CFC 12 production facilities were dismantled in 2002. Therefore, Linhai purchased CFC 12 as feedstock of CFC 12 from Juhua and as commodity as well. The production of CFC 13 and the consumption of CFC 12 of each month in 2003 were summarized by the *Monthly Warehouse Receiving, Delivering, and Inventory Reports*, which were prepared by the warehouse of Linhai and submitted to the accounting office of Linhai. During the verification, it was found that these reports matched the accounting records. The verified production of CFC 13, its sales, and consumption of CFC 12 are shown in the following table.

CFC 13 Production, Sales, and CFC 12 Consumption in Linhai in 2003

CFC 13 Production	CFC 13 Sales			CFC 12 Consumption
		Domestic	Overseas	
21. 278 Tonnes	24.698 Tonnes	24.488 Tonnes	0.21 Tonnes	58.013 Tonnes

15. Only one Israel company bought 210 kg of CFC 13 from Linhai. Unlike CFC 11 and CFC 12 exported by Dongyang, the export of CFC 13 did not need license from Government of China.

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

16. Zhejiang Chemical Industry Research Institute (Zhejiang Chemical) produced CFC 115 in 2003. Due to low market demand, Zhejiang Chemical did not produce CFC 114 in 2003. The production of CFC 115 was reflected in the *Monthly Production Report* and the *Monthly Raw Materials Consumption by Main Products*, which were reported to the accounting office in Zhejiang Chemical by the end of each month. This report summarized the daily reports of production and consumption and formed the base of accounting records. Therefore, during the verification, these reports were used to check the accuracy of accounting records and no inconsistency was found. The verified CFC 115 production by Zhejiang Chemical in 2003 and the its sales are presented in the following table:

CFC 114 and CFC 115 Production and Sales by Zhejiang Chemical in 2003

	Production	Sales		
			Domestic	Overseas
CFC 114	0.000 Tonnes	2.0909 Tonnes	1.0909 Tonnes	1.0000 Tonnes
CFC 115	131.837 Tonnes	2.9870 Tonnes	2.9870 Tonnes	0.0000 Tonnes

17. The 1 ton of CFC 114 was sold to a customer in United Arab Emirates in 2003, which was licensed by the State Office for Import and Export Management of Substances Depleting the Ozone Layer in Beijing.

18. Zhejiang Chemical in 2003 purchased 178 Tonnes of CFC 113 from Changshu 3F as feedstock of CFC 115 production. This purchase was verified in Changshu 3F. Zhejiang Chemical purchased AHF in 2003 for the production of CFC 115. The verified consumptions of CFC 113 and AHF were

shown in the following table.

CFC 113 and AHF Consumption by CFC 115 in Zhejiang Chemical in 2003

Consumed by	CFC 113	AHF
CFC 114	0.00 Tonnes	0.00 Tonnes
CFC 115	178.00 Tonnes	48.51 Tonnes
Total	178.00 Tonnes	48.51 Tonnes

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

19. Jiangsu Changshu Ref. Plant-Changsu 3F (Changshu 3F) produced CFC 11, CFC 12, CFC 113, and CFC 115 in 2003. The *Monthly Production Reports*, which were sent to accounting office in Changshu 3F at the end of each month and prepared by production units, summarized the production of CFC 11, CFC 12, CFC 113, and CFC 115 in the current month. They also recorded the consumption of CTC, AHF, and PCE. The data contained in these reports were reconciled with accounting records of Changshu 3F. The results show that the accounting records reflected the production and consumption. The verified productions of CFC 11, CFC 12, CFC 113, and CFC 115 and their sales are presented in the following table:

CFC 11, CFC 12, CFC 113, and CFC 115 Production in Changshu 3F in 2003

	Production	Sales		
			Domestic	Overseas
CFC 11	8,884 Tonnes	8,858 Tonnes	8,645 Tonnes	213 Tonnes
CFC 12	4,335 Tonnes	5,053 Tonnes	2,234 Tonnes	2,819 Tonnes
CFC 113	2,125 Tonnes	1,643 Tonnes	1,614 Tonnes	29 Tonnes
CFC 115	180 Tonnes	164 Tonnes	164 Tonnes	0 Tonnes

20. The production of CFC 113 only refers to the commodity, excluding one used as intermediates for chemical conversion, which was also verified during the verification.

21. The overseas customers bought CFC 11, CFC 12, CFC 113, and CFC 115 from Changshu 3F in 2003 included Saudi Arabia, Lebanon, Chile, Cyprus, Gabon, Indonesia, United Arab Emirates, Nigeria, Cambodia, Papua New Guinea, and Korea.

22. In 2003, Changshu 3F purchased back CFC 12 and CFC 113 from its distributors since the prices of overseas markets were more favorable than in domestic market.

23. Changshu 3F purchased CTC, purchased and produced AHF, and imported PCE in 2003. The verified consumption of CTC, AHF, PCE, and CFC 113 are shown in the following table:

CTC, AHF, PCE, and CFC 113 Consumed by CFC 11, CFC 12, CFC 113, and CFC 115 in Changshu 3F in 2003 for ODS Production Only

Consumed by	CTC	AHF	PCE	CFC 113
CFC 11	10,435.130 Tonnes	1,383.810 Tonnes		
CFC 12	5,776.530 Tonnes	1,805.700 Tonnes		
CFC 113		2,216.680 Tonnes	2,183.052 Tonnes	
CFC 115		114.560 Tonnes		300.750 Tonnes
Total	16,211.660 Tonnes	5,520.750 Tonnes	5,005.094 Tonnes	300.750 Tonnes

24. In July 2003 Changshu 3F got a certificate of ISO 9001:2000 for its manufacture and sale of fluorine chemicals product.

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

25. Jiangsu Meilan Electro-Chemical Plant (Meilan) produced CFC 11 and CFC 12 in 2003. A

Monthly Production Statistic Report was prepared by the CFC production unit at the end of each month. This report records the total production of AHF, CFC11, and CFC 12 in the current month. It also records the consumption of CTC and AHF for productions of CFC 11 and CFC 12. This report, during the verification, was used to check the accuracy of accounting records since both had the same source of data – raw material receiving slips prepared by production unit and product receiving slips prepared by warehouse and cosigned by production unit. All the data contained in the reports matched the data in accounting books. The verified productions and sales of CFC 11 and CFC 12 are presented in the following table:

CFC 11 and CFC 12 Productions by Meilan in 2003

	Production	Sales		
			Domestic	Overseas
CFC 11	997.14 Tonnes	603.901 Tonnes	531.901 Tonnes	72.0 Tonnes
CFC 12	1,066.03 Tonnes	999.012 Tonnes	814.212 Tonnes	184.8 Tonnes

26. The only overseas customer of CFC 11 and CFC 12 in 2003 was in Taiwan and the destination of exports was Kelang, Malaysia. These exports were licensed by the State Office for Import and Export Management of Substances Depleting the Ozone Layer in Beijing. Each shipment had its separate license.

27. Meilan produced and purchased CTC and AHF in 2003. AHF was produced by the CFC production unit while CTC was produced by another unit. In 2003, Meilan produced 3,395.89 Tonnes of CTC and 31% was transferred to the CFC production unit and the balance was reserved by the CTC production unit for outside sales. It was said that in 2004 all CTC produced by Meilan will be transferred to CFC production unit as feedstock of CFC production. To meet the demand of CFC production, Meilan purchased CTC and AHF from other suppliers in 2003. The volumes of CTC and AHF produced and purchased were verified. The following table presents the verified consumption of CTC and AHF by CFC production.

CTC and AHF Consumed by CFC 11 and CFC 12 in Meilan in 2003

Consumed by	CTC	AHF
CFC 11	1,236.593 Tonnes	177.182 Tonnes
CFC 12	1,456.029 Tonnes	444.197 Tonnes
Total	2,692.622 Tonnes	621.379 Tonnes

Wu Ning
Financial Analyst
Verification Team of CFC Production in China in 2003
February 12, 2004

SUPPLEMENTARY REPORT
ON
2003 PROGRESS REPORT
AND
PERFORMANCE AUDIT ON 2002 PHASE-OUT TARGETS

CHINA SOLVENT SECTOR PHASE-OUT PLAN

submitted by
State Environmental Protection Administration (SEPA), China
and
United Nations Development Programme (UNDP)

2 February 2004

Subsequent to the "Progress Report on the Implementation of Solvent Sector Plan for ODS Phaseout in China for 2003 and 2004 Annual Implementation Programme" submitted by SEPA and UNDP in October 2003, and the comments of the Multilateral Fund Secretariat in ExCom Document 41/28, this is a supplementary report on the results of the independent Performance Audit and the UNDP Technical Audit undertaken in November and December 2003, as stated in Section E and F of the original Progress Report. The result of the audits was submitted to the MLF Secretariat immediately prior to the commencement of the 41st Executive Committee Meeting, but was too late for the Secretariat to review and report to the Executive Committee.

After the submission of the 2003 Progress Report, ODS Reduction Contracts were signed with 12 enterprises in November 2003. The number of SMEs participated in the voucher system was revised from 78 downward to 71, excluding 7 SMEs that were disqualified for the voucher system. The revised quantities to be phased out by these 71 SMEs were 142.37 ODP tonnes (instead of 170.04 ODP tonnes) of CFC-113 and 8.21 ODP tonnes (instead of 11.50 ODP tonnes) of TCA. The revised four year cumulative quantities to be phased out by the 2000, 2001, 2002 and 2003 Annual Implementation Programmes are reflected in the following revised Table 3:

Table 3 (revised): Phase-out through 2000 – 2003 ODS Reduction Contracts, Voucher System and Reimbursement Mechanism

			CFC-113 (ODP MT)	TCA (ODP MT)	CTC (ODP MT)	No. of Enterprises	Funding (US$ 1,000)
2000	Contracts for future phaseout	Planned	372.8	10	0	10 – 20	$5,000
		Signed	378.4	10.1	8.36	16	$4,132
	Phase-out achieved	On-going projects	-	7.4	-		
		Total 2000 phaseout	-	7.4	-		
2001	Contracts for future phaseout	Planned	524	10	0	10 – 20	$5,505
		Signed	541.6	10.6	0	21	$4,361
	Phase-out achieved	On-going Projects	54.1	-			
		2000 Contracts	340.1	9.8	8.36		
		Total 2001 phaseout	394.2	9.8	8.36		
2002	Contracts for future phaseout	Planned	500	25	55	20 – 40	$5,830
		Signed	535.8	43.2	17.94	32	$4,004
	Phase-out achieved	On-going Projects	291.3	41.7			
		2000 Contracts	38.4	0.4	-		
		2001 Contracts	-	-			
		Total 2002 phaseout	329.7	42.1	-		
2003	Activities for future phaseout	Planned	600	78	55	120-140	$5,255
		Signed	475.3	37.9	0	226	$5,100
	Phase-out achieved	On-going Projects	-	-	-		
		2001 Contracts	336.3	7.3			
		2002 Contracts	-	-	-		
		2003 Activities *	142.1	44.9			
		Total 2003 phaseout	478.4	52.2	-		
2004	Phase-out achieved	2001 Contracts +	178.9	2.8	-		
Four Year Cumulative Total	Phaseout Planned		1,996.8	123	110		
	Phase out Targets		2,200	119	110		
	Phaseout to be achieved by completion of on-going projects and signed contracts		2,276.5	150.9	26.3		
	Actual Phase-out achieved +		1,381.2	114.3	8.36		

* From 2003 retroactive reimbursement and gradual phase-out activities

\+ Phase-out achieved as of February 2004

While the phase-out quantity for CFC-113 and TCA signed up in the 2003 Annual Implementation Programme fell short of the required annual quantities to be phased out, the four year cumulative quantities still exceed the required cumulative phase-out targets. As indicated in the original progress report, SEPA and UNDP will intensify efforts to locate enterprises that had phased out the use of OD solvents at its own initiative, and process retroactive reimbursement so that the cumulative quantities of phase-out will continue to exceed the requirements in the Agreement.

The MLF Secretariat pointed out that the 2002 consumption of CFC-113 for exempted feedstock uses was reported as 211 ODP tonnes, used in the production of CFC-114 and CFC-115. This quantity exceeded China's agreement that "the annual production and import of these specifically exempted substances will not exceed 10 ODP tonnes of CFC-113 for feedstock, …"

China would like to point out that the intent of this limit, as stated in paragraph c of the Agreement, is "to ensure that production and import of CFC-113 and CTC specifically for exempted feedstock use and process agent use are not diverted to solvent use, China agrees to prepare annually a list of the quantities purchased of these ODSs by specific plants for these exempted uses and to ensure that such production and/or import is not diverted to solvent use. In addition, China agrees that the annual production and import of these specifically exempted substances will not exceed 10 ODP tonnes of CFC-113 for feedstock, …" While China realizes that it had provided an underestimated quantity of CFC-113 use for feedstock of only 10 ODP tonnes at the time of concluding the Agreement, it is noted that the 211 ODP tonnes of CFC-113 was verified as being used in the production of CFC-114 and CFC-115, not for solvent use. Therefore the intent to monitor and control the diversion of feedstock to solvent use has been achieved.

Furthermore, China commits to monitor the use of CFC-113 as feedstock to ensure that it will not be diverted to solvent use, and to continue to reduce the quantity of CFC-113 used as feedstock. In view of the fact that the control on diversion of CFC-113 to solvent use can be monitored and achieved, China requests the Executive Committee to allow the use of CFC-113 for feedstock to exceed the 10 ODP tonnes limit, with the commitment that China will gradually reduce the annual quantity of CFC-113 for feedstock use, and to ensure that CFC-113 for feedstock use can be verified and that it is not diverted to solvent use. China will continue to report annually to the Executive Committee on the quantity and purpose of its CFC-113 for feedstock use.

PERFORMANCE AUDIT ON 2002 TARGETS

An independent accounting firm, Beijing Zhong Tian Hua Zheng Certified Public Accountants Co. Ltd. was contracted to undertake an independent performance audit during November 2003. The scopes of the performance audit are:

a) to verify the national consumption level of CFC-113, TCA and CTC as cleaning solvents, for the year 2002;

b) to verify the implementation of phase-out activities, carried out at individual enterprise level for 21 enterprises that had signed the 2001 ODS Reduction Contracts, with phase-out to be achieved in 2003;
c) to verify the status of implementation of policy measures and technical assistance activities.

It is noted that performance audit for 2001 were carried out by the Department of Foreign Funds Application Audit of the China National Audit Office (CNAO), however due to its tight schedule on other pre-scheduled audit activities as a result of SARS situation in China, CNAO informed UNDP that it would not be able to complete the performance audit by November 2003. Through a solicitation process, Beijing Zhong Tian Hua Zheng Certified Public Accountants Co. Ltd. was contracted in October 2003 to undertake the performance audit on the 2002 phase-out targets and limits and the implementation of the 2002 Annual Implementation Programme.

Scope of Audit

To carry out the performance audit, the following process was undertaken by Zhong Tian Hua Zheng CPA Co. Ltd.:

a) In accordance with draft Terms of Reference for the performance audit formulated by UNDP and the project characteristic, Zhong Tian Hua Zheng prepared its audit programme and uniform audit work sheets;
b) The auditors were trained prior to the audit. They were organized to study the data related to the project and audit target as well as audit emphasis;
c) The auditors were divided into several groups according to the regions of the enterprises and carried out audit on-the-spot separately;
d) Zhong Tian Hua Zheng hired a technical expert to assist the auditors to audit 2 individual enterprises. Technical reports were submitted by the expert.

Audit Process

During the audit at individual enterprise level, on the basis of the actual condition of the enterprise, the implementing surrounding of the enterprises was studied, and the production and operation of the enterprise was inspected on the spot. After getting familiar with the production procedure, the management of production, the fixed assets and the storage, the auditors applied an all-round audit on the implementation of the ODS phase-out project, including the cleaning equipments, consumption of ODS as well as use of MLF grant from five points of purchasing, management of storage, production and equipment, financial accounting. Based on the financial accounting documents of the enterprise, the auditors cross-checked the ODS and substitute consumption figures through checking the information on major raw materials and products, revenues and costs, as well as the running records of the cleaning equipments, etc. Also, the auditors traced some enterprises' purchasing of ODS to their suppliers.

For the actual consumption level, the auditors verified the actual levels of production, import and export for CFC-113, TCA and CTC in 2002 at the national level. First, information on ODS solvent production was obtained from the Audit Report by Foreign Funds Application Audit Dept. of CNAO for CFC-113; from Inspection Reports by the World Bank and the MP MLF

ExCom for TCA (the figures in the two reports coincides each other); and from Audit Report on the 21 CTC consuming enterprises by Beijing Zhong Tian Hua Zheng Certified Public Accountants Co., Ltd. in October 2003 for CTC solvent consumption.

Information on import and export of ODS solvents from the ODS Import and Export Control Office jointly set up by Ministry of Foreign Trade and Economic Cooperation (MOFTEC), SEPA, and the General Administration of the Customs, were verified. Finally national annual consumption level was calculated as the sum of production and import minus export for each ODS solvent.

The actual implementation status of policies stipulated by SEPA and technical assistance activities under the Annual Implementation Programme were then analysized.

Audit Conclusions

Based on the CNAO Audit Report on CFC-113 production, and the official government import and export data, the national consumption level of CFC-113 was verified at 2,196 ODP tonnes, which was below the consumption control targets of 2,200 ODP tonnes for 2002.

According to the Inspection Report by the World Bank and the MLF Secretariat, the total 2002 production quantity of TCA was 120.5 ODP tonnes. The data from the ODS Import and Export Control Office showed import quantity of 261.74 ODP tonnes and export of 1.6 ODP tonnes. Therefore the total national level consumption of TCA was 380.64 ODP tonnes, which was below the 2002 consumption control targets of 605 ODP tonnes.

For CTC as cleaning solvent, an independent audit verified that the consumption at the remaining 21 of the original 34 CTC-consuming enterprises was 10.47 ODP tonnes in 2002. As these enterprises identified in the original survey represented 38.3% of the national consumption, the 2002 CTC consumption can be extrapolated at 27.34 ODP tonnes, which is below the 2002 consumption control targets of 110 ODP tonnes.

The independent performance therefore verified that China met the 2002 consumption control targets for CFC-113, TCA and CTC for solvent use.

For the 21 enterprises who had signed the 2001 ODS Reduction Contracts in July and September 2001, that would contribute to phasing out 541.58 ODP tonnes of CFC-113 and 10.6 ODP tonnes of TCA, the audit concluded that phase-out activities at 5 of these enterprises had been completed by October 2003, with 64.47 ODP tonnes of CFC-113 and 3.9 ODP tonnes of TCA phased out. The audit report identified the main reasons of the delays to the complexity of the phase-out activities, the different demands for updating equipment specifications and the situation of SARS in China, that delayed the delivery of equipment. The auditors also recognized the yearly reduction of ODS consumption for 2001, 2002 and the first ten months of 2003, and is of the opinion that overall the project was implemented smoothly.

The performance audit also verified the implementation of policies and technical assistance activities and noted that all enterprises using ODS solvents have license and purchase ODS solvent according to quota, which indicates that the policy implemented by SEPA has performed

effectively. It also concluded that the policies and technical assistance activities carried out by SEPA was in conformity with the actual situation of the sector plan and ensured the phase-out projects to be smoothly implemented.

Issues Identified

During the performance audit, the auditors found that the quantities of ODS consumption at three enterprises was different from the ODS Reduction Contracts, resulting in an aggregated increase of some 2.55 ODP tonnes in the total ODS consumption that would be phased out. The one enterprise that has actual ODS consumption lower than the quantity stipulated in the ODS Reduction Contract, will be investigated by SEPA for appropriate action and SEPA will report to the auditors and UNDP.

The performance audit also indicated that the schedule of disposal of baseline equipment was not in accordance of the schedule stipulated in the ODS Reduction Contracts, due to the delay in completing enterprise-level phase-out activities. It also discovered that two enterprises have sold off their baseline equipment. SEPA has been informed to take appropriate action to work with these two enterprises to recover the baseline equipment for proper disposal. SEPA commits to improve and properly monitor the disposal of baseline equipment in the future.

Observation and Recommendation

Through the performance audit, the auditors recognized that all enterprises realized the importance of use of non-ODP solvents, and some enterprises began to phase-out ODS solvent before this project. Most of the enterprises' accounting department is well organized, internal control proved to be effective, the accounting function be identified well, and the business can be recorded in time. Perfect financial management on storage, equipment, management system on production and technique procedure exist in most of the enterprises, which can ensure the phase-out project to be smoothly implemented basically. At the same time, most of the enterprises have completed testing on use of non-solvent, and has more or less used non-ODS solvents in their production. In the auditor's opinion, technique, staff qualification and management system of most enterprises can meet the needs of the ODS phase-out project. For long run, the use of non-ODS solvent can bring good economic and social benefit, and the expected purpose of the project will be realized.

The performance audit verified the control target of ODS phase-out project for the year 2002 was realized at the national level. By the end of October 2003, while phase-out activities at some of the enterprises had not been completed fully due to the complexity of the cleaning technique and equipment, but in terms of the implementation status, the auditor thinks that overall the project was implemented smoothly and the expected target can be realized. The management and control on the project was effective, and the whole phase-out programme was in conformity with the situation of China. The policies made and measures taken which conformed to the situation of the project were the guarantee to smoothly realize the phase-out project, because of the complexity of the phase-out activities, the support from MLF is necessary.

UNDP INDEPENDENT TECHNICAL AUDIT

A UNDP-commissioned technical audit was conducted by two technical experts 3-9 December 2003. The two experts visited and inspected 14 of the 21 enterprises who had signed the 2001 ODS Reduction Contracts. Most of these 14 enterprises had completed installation of the replacement equipment, undertaken trial and some had started its cleaning applications with non-ODS alternative cleaning solvents. Most of these 14 enterprises were generally well satisfied with the performance of the new installation. The remaining enterprises will have their equipment installed, commissioned and undergo trial so that project activities will be completed by the end of 2003.

During their visits, the experts discussed with the enterprise to review the alternative cleaning technology, inspected the baseline and replacement equipment, evaluated the cleanliness result, confirmed ODS consumption and phase-out, verified destruction of baseline equipment and identified issues that need resolutions.

The technical audit concluded that the 14 enterprises show serious effort in the elimination of ODS in their cleaning applications and that they not only fulfil the MLF funded phase-out activities, but also develop self-financed replacement technologies enthusiastically.

The technical audit also identified that the original phase-out schedule in some enterprises has been delayed due to the late delivery of equipment, as a result of the need to modify the equipment specifications because of the selection of the alternative technologies or the change of alternative technology due to practical need.

The technical audit also discovered some practical problems in the use of new replacement equipment and cleaning agents that need to be resolved with the equipment suppliers. In addition, some alternative cleaning solvents will involve exercising safety measures due to its flammability, higher operating costs in terms of electricity, DI water will also be incurred by the enterprises.

SEPA and UNDP will work together with these enterprises to resolve the outstanding issues identified.

RELEASE OF 2004 FUNDING TRANCHE

The performance audit and technical audit undertaken in 2003 concluded that the 2002 phase-out targets and limits stipulated in the Agreement have been met, the Executive Committee is requested to review this Supplementary Report, in conjunction with the "Progress Report on the Implementation of Solvent Sector Plan for ODS Phaseout in China for 2003 and 2004 Annual Implementation Programme" submitted in October 2003 (Revised 23 November 2003), the comments of the Secretariat contained in ExCom Document 41/28 and approve the 2004 Annual Implementation Programme of the China Solvent Sector Plan as the basis for the release of the 2004 funding level of $5,555,000 and the corresponding support fees of $416,625.

Annex II

CFC Production Verification 2003

Tables

CFC Production Phase Out Verification (Including Gradual Closure)

February 2004

(A8 Jiangsu Meilan)

A. Plant identification

Name of Enterprise	:	Jiangsu Meilan Electro-chemical Plant
Plant Ref. Number	:	
Sector Plan #	:	1
SRI #	:	A8
Address of the Plant	:	No. 460 Yangzhou Lu, Taizhou City, Jiangsu Province, PC 225300
Contact person(s) and Functional Title	:	Mr. Yin Ming, General Manager
Telephone Number	:	0523-6552276-2128
Fax Number	:	0523-6552323
E-mail Address	:	mldh.tz@public.tz.js.cn

B/ Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, the World Bank
Date of Plant Visit	:	Feb 10-11, 2004
Duration of Visit	:	1.5 days

Plant History

ODS Products	No. of Lines	Capacity in Baseline Year*	**Production****						
			Base line* Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003
CFC-11	1	3,000	1,050	2,009	1,766	1,049.8	1,049.7	1,049.7	997.14
CFC-12	1	3,000	1,793	1,606	1,866	1,793.0	1,792.9	1314.7	1,066.03
CFC-13									
CFC-113									
CFC-114/115									
Raw Materi Production									
HF	1	3,000*	7	553	3,336	4,223	4,835	4835	6,573
CTC	1****	-	-	-	-	-	703	2,929	3,395.89

*The year from which data is used for approving the ODS production phase out project.

**Till the year prior to the verification.

***This applies to plants where production of either HF or CTC or both is integrated. The HF production has been expanded to 6,000. In 2001 a new HF production unit with capacity of 10,000 was built and started up.

**** A new chloromethane production unit was built and started up in 2001. The total capacity of various chloromethanes is 30,000, in which CTC shares 1,500. In 2002, it was expanded to 70,000 in which CFC shares 3,500. The actual production in 2001 and 2003 has been verified by a Word Bank Team in Sept. 2003.

Plant Activity in the Year Verified

Plant for Complete Closure

No. of CFC-11/12 lines closed	:	N.A.
Date of CFC production ceased	:	N.A.
Date of dismantling completed	:	N.A.
Verification of destruction of key components by		[Name of certifying body] N.A.
Reactor tank(s) dismantled and destroyed	:	N.A.
Control and monitoring equipment dismantled destroyed	:	N.A.
Pipes dismantled and destroyed	:	N.A.
Utilities dismantled and destroyed	:	N.A.
Evidence of destruction (photos or videos)		N.A.
Chance of resuming production	:	N.A.
Assessment by the verification team to be included in the verification report	:	N.A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

CFC Products (CFC-	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003
Quota			1,766	1,050	1,050	1,050	1,000
Opening Stock at beginning of year	117	123	337	275	53.1	155.1	137.6
Production	1,050	2,009	1,766	1,049.8	1,049.7	1,049.7	997.14
Sales	1,044	1,795	1,828	1,271.7	947.7	1,067.2	603.9
Closing stock at end of year	123	337	275	53.1	155.1	137.6	530.84

CFC Products (CFC-	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001**	Year 5 2002	Year 6 2003
Quota			1,866	1,793	1,793	1,313	1,068
Opening Stock at beginning of year	133	201	54	101	138.8	81.9	150.23
Production	1,793	1,606	1,866	1,793.0	1,792.9	1,314.7	1,066.03
Sales	1,725	1,753	1,819	1,755.2	1,849.8	1,246.4	999.01
Closing stock at end of year	201	54	101	138.8	81.9	150.2	217.25

* The year from which the data is used to approve the ODS production phase out project.

** In May 2001, the enterprise used 0.04 tons of their own product as make-up for refrigeration system of their own production unit. The Verification categorized such product transfer as sales.

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11	1,050	2,009	1,766	1,049.8	1,049.7	1,049.7	997.14
HF/CFC-11	0.174	0.181	0.177	0.180	0.180	0.186	0.178
CTC/CFC-11	1.273	1.267	1.270	1.271	1.271	1.309	1.240
CFC-12	1,793	1,606	1,866	1,793.0	1,792.9	1314.7	1,066.03
HF/CFC-12	0.377	0.403	0.391	0.388	0.397	0.416	0.417
CTC/CFC-12	1.338	1.368	1.375	1.342	1.361	1.397	1.366

* Till the year of the verification

Operational days per year

Type of Product	Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11		210	146	88	96	106	81
CFC-12		217	131	152	213	139	169

*Till the year of the verification

Monthly CFC Production and Raw Material Consumption

Notice: The Plant has separate production lines for CFC-11 and CFC-12. However, their raw material stocks are combined. Therefore, the two tables (CTC for CFC-11 and CTC for CFC-12) are combined together here.

CFC-11 / CFC-12 Production and CTC Consumption

Month	CFC-11 and CFC-12	No. of Op'ting Days for CFC-11	No. of Op'ting Days for CFC-12	CFC-11 Production	CFC-12 Production	CTC Consump-tion of CFC-11	CTC Consump-tion of CFC-12	CTC/ CFC-11 Ratio	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ Added*	CTC Sold Out	CTC Closing Stock
Jan		-	-	-	-	-	-			29.05	-	-	29.05
Feb		-	-	-	-	-	-			29.05	45.00	-	74.05
Mar		13.0	18.0	164.89	189.15	206.36	261.48	1.252	1.382	74.05	426.74	-	32.94
Apr		-	-	-	-	-	-			32.94	40.90	-	73.84
May		-	28.0	-	205.95	-	279.29		1.356	73.84	252.64	-	47.19
Jun		-	17.0	-	94.60	-	130.41		1.379	47.19	140.15	-	56.93
Jul		-	15.0	-	73.96	-	100.88		1.364	56.93	58.00	-	14.05
Aug		-	17.0	-	66.97	-	92.42		1.380	14.05	99.90	-	21.53
Sept		-	17.0	-	97.80	-	132.72		1.357	21.53	131.95	-	20.77
Oct		20.0	22.0	191.75	122.57	244.14	165.22	1.273	1.348	20.77	417.70	-	29.10
Nov		30.0	23.0	397.00	131.62	489.91	179.04	1.234	1.360	29.10	671.43	-	31.59
Dec		18.0	12.0	243.50	83.41	296.18	114.58	1.216	1.374	31.59	412.27	-	33.10
		81.0	169.0	997.14	1,066.03	1,236.59	1,456.03	1.240	1.366		2,696.67	-	

*Partly purchased-in from the market, and partly provided by their CTC production unit.

Monthly CFC Production and Raw Material Consumption

Notice: The Plant has separate production lines for CFC-11 and CFC-12. However, their raw material stocks are combined; and there other HF uses. Therefore, the two tables (HF for CFC-11 and HF for CFC-12) are combined together here.

CFC-11 / CFC-12 Production and HF Consumption

Month	CFC-11 and CFC-12	No. of Op'ting Days for CFC-11	No. of Op'ting Days for CFC-12	CFC-11 Production	CFC-12 Production	HF Consump-tion of CFC-11	HF Consump-tion of CFC-12	HF/ CFC-11 Ratio	HF/ CFC-12 Ratio	HF Opening Stock	HF Procured/ Added	HF Sold Out & for Other Uses*	HF Closing Stock
Jan		-	-	-	-	-	-			52.54	701.86	538.20	216.20
Feb		-	-	-	-	-	-			216.20	601.50	797.47	20.23
Mar		13.0	18.0	164.89	189.15	29.56	80.54	0.179	0.426	20.23	1,002.99	876.69	36.44
Apr		-	-	-	-	-	-			36.44	822.03	784.85	73.62
May		-	28.0	-	205.95	-	85.29		0.414	73.62	1,093.63	953.82	128.14
Jun		-	17.0	-	94.60	-	39.86		0.421	128.14	856.13	810.76	133.65
Jul		-	15.0	-	73.96	-	30.78		0.416	133.65	907.14	811.89	198.12
Aug		-	17.0	-	66.97	-	28.09		0.419	198.12	718.57	802.15	86.45
Sept		-	17.0	-	97.80	-	40.23		0.411	86.45	938.69	781.95	202.97
Oct		20.0	22.0	191.75	122.57	35.11	50.48	0.183	0.412	202.97	1,047.76	1,011.49	153.66
Nov		30.0	23.0	397.00	131.62	70.04	54.14	0.176	0.411	153.66	951.00	819.60	160.88
Dec		18.0	12.0	243.50	83.41	42.48	34.81	0.174	0.417	160.88	748.93	821.42	11.11
		81.0	169.0	997.14	1,066.03	177.18	444.20	0.178	0.417		10,390.23	9,810.29	

* Refers to all HF for other non-CFC uses within the enterprise and HF sold out as commodity.

CFC Production Phase Out Verification (Including Gradual Closure)

Feb 2004

(A 10 Jiangsu Changsu 3F)

A. Plant identification

Name of Enterprise	:	Jiangsu Changsu 3F Refrigerant Co. Ltd.
Plant Ref. Number	:	
Sector Plan #	:	6
SRI #	:	A10
Address of the Plant	:	Fushan, Haiyu Town; P.C. 215522
		Changsu City, Jiangsu Province
Contact person(s) and Functional Title	:	Shen Xuezhong, General Manager
Telephone Number	:	0520-2629918
Fax Number	:	0520-2621243
E-mail Address	:	

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	Feb 07-09, 2004
Duration of Visit	:	2.5 days

Plant History

ODS Products	No. of L	Cap'ty in Baseline Y	Production**						
			Baseline Y	Year 1 19	Year 2 19	Year 3 200	Year 4 20	Year 5 2002	Year 6 2003
CFC-11		1	10,232	8,380	7,960	8,192	8221.9	10,231.9	8,883.75
CFC-12			2,739	3,452	2,780	5,019.1	5,075	3,034.7	4,334.82
CFC-13								-	-
CFC-113 (as ODS)			3,858	3,470	3,542	3,445.0	3,375	2,750	2,124,92
CFC-115 (as ODS)			34	8	150	150	50	100	179.85
Raw Materials Production ***									
HF			4,804	5,276	7,615	7,497	10,428	6,376	6,402
CTC								19.5	

*The year from which data is used for approving the ODS production phase out project.

**Till the year prior to the verification.

***This applies to plants where production of either HF or CTC or both is integrated. Now the HF production has been expanded to 12,000, with 3 production lines.

D. Plant Activity in the Year Verified

Plant for Complete Closure

No. of CFC-11/12 lines closed : N.A.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of Certifying Body] N.A.

Reactor tank(s) dismantled and destroyed : N.A.

Control and monitoring equipm dismantled and destroyed : N.A.

Pipes dismantled and destroyed : N.A.

Utilities dismantled and destroyed : N.A.

Evidence of destruction (photos or videos) :

Chance of resuming production : N.A.

Assessment by the verification team to be included in the verification report : N.A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

CFC Products (CFC-	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota****			7,960	8,192	8,222	1,0232	8,884
Opening Stock at beginning of year	511	874	629	352	40.5	0.4	36.9
Production	10,232	8,380	7,960	8,192.0	8,221.9	10231.9	8,883.75
Sales	9,869	8,625	8,237	8,503.5	8,262	10,195.4	8,858.06
Closing stock at end of year	874	629	352	40.5	0.4	36.9	62.59

CFC Products (CFC-	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota****			2,779	5019	5,075	3,035	4,335
Opening Stock at beginning of year	473	590	514	1	3.3	31	99.9
Production	2,739	3,452	2,780	5,019.1	5,075	3034.7	4,334.82
Sales*****	2,622	3,528	3,293	5,016.8	5,047.3	2965.9	4,389.95
Closing stock at end of year	590	514	1	3.3	31	99.9	44.75

CFC Products(CFC-113	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota			3,542.5	3,445	3,375	2,750	2,125
Opening Stock at beginning of year	212	435	426	248	5.5	0.5	165.3
Production***	3,858	3,470	3,542	3,445.0	3,375	2,750	2,124.92
Sales*****	3,635	3,479	3,720	3,687.5	3,380	2,585.2	1,627.62
Closing stock at end of year	435	426	248	5.5	0.5	165.3	662.6

CFC Products (CFC-115	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota****			150	100	50	100	180
Opening Stock at beginning of year	0	12	3	58	74.1	44.8	15.1
Production	34	8	151	100.2	50	100	179.85
Sales	22	17	96	84.1	79.3	129.7	164.01
Closing stock at end of year	12	3	58	74.1	44.8	15.1	30.94

*The year from which data is used to approve the ODS production phase out project.

**Till the year of the verification

*** Refers to CFC-113 production for non- raw material uses. CFC-113 production for uses as intermediates for CFC-114/115 and other non-CFC products excluded.

**** In the beginning of 2003, the quota for CFC-11, CFC-12, and CFC-115 is issued as 9,532, 3,735 and 60 ODP tons respectively. However, based upon the market demand conditions, the enterprise applied and the Chinese Government approved to change the quota for CFC-11, CFC-12 and CFC-115 to 8,884, 4,335 and 108 ODP tons respectively, for which the quota of real ODS tons became 8,884, 4,335 and 180 tons respectively.

***** The Enterprise purchased-in certain amount of product from market and sold out to the clients. Therefore, the sales here refers to the sales of the product that produced by the enterprise under quota control (i.e. The total sales in accounting deducted by amount purchased-in).

Annual HF/CFC and CTC, PCE or CFC 113/ CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11	10,232	8,380	7,960	8,192.0	8,221.9	10,231.9	8,883.75
HF/CFC-11	0.165	0.167	0.160	0.160	0.157	0.158	0.156
CTC/CFC-11	1.191	1.259	1.259	1.255	1.247	1.187	1.178
CFC-12	2,739	3,452	2,780	5,019.1	5,075	3,034.7	4,334.82
HF/CFC-12	0.38	0.409	0.401	0.409	0.411	0.408	0.417
CTC/CFC-12	1.380	1.514	1.403	1.400	1.411	1.313	1.333
CFC-113	3,858	3,470	3,542	3,445.0	3,375	2,750	2,124.92
HF/CFC-113	0.480	0.456	0.480	0.509	0.474	0.458	0.453
PCE/CFC-113	1.053	1.041	1.065	1.048	1.067	0.995	1.027
CFC-115	33.6	8	151	100.2	50	100	179.85
HF/CFC-115	1.122	1.678	1.138	0.886	0.803	0.670	0.637
CFC-113/115	2.383	2.02	1.607	2.105	1.720	1.769	1.672

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11	356	326	323	302	297	349	314
CFC-12	357	339	250	293	307	265	345
CFC-113	313	343	340	327	327	304	332
CFC-115	179	86	353	246	85	144	221

*Till the year of the verification.

Monthly CFC Production and Raw Material Consumption

CFC-11 Production and CTC Consumption

Month	CFC-11	No. of Operating days*	CFC-11 Production	CTC Consump-tio n	CTC/ CFC-11 Ratio**	CTC Opening Stock***	CTC Procured/ Added	CTC Sold Out	CTC Closing Stock***
Jan		31.0	930.25	1,094.36	1.176	Please refer to " Monthly CTC Overall Balance"			
Feb		31.0	925.00	1,088.91	1.177	Table attached later.			
Mar		28.0	900.16	975.64	1.084				
Apr		31.0	850.00	992.46	1.168				
May		30.0	909.98	1,092.46	1.201				
Jun		22.0	335.14	401.81	1.199				
Jul		30.0	870.00	1,032.90	1.187				
Aug		30.0	800.73	974.96	1.218				
Sept		31.0	875.60	1,053.81	1.204				
Oct		30.0	878.26	1,053.04	1.199				
Nov		20.0	608.63	704.78	1.158				
Dec		-	-	-					
		314.0	8,883.75	10,465.13	1.178				

* Operating days of a month is recorded from the 26th day of the previous month to 25th day of the month. This is the reason for 31 operating days appeared in February, April and September

** The CTC/CFC-11 ratio in March was lower than the theoretical value. The enterprise management explained that was due to part of the product was processed in Feb , while packaged and transferred to warehouse in Mar.

*** The CTC storage is used commonly by both CFC 11 and CFC 12 production units.

CFC-11 Production and HF Consumption

Month	CFC-11	No. Of Operating days*	CFC-11 Production	HF Consump-tio n	HF/ CFC-11 Ratio	HF Opening Stock**	HF Procured/ Added	HF Sold Out	HF Closing Stock**
Jan		31.0	930.25	144.65	0.155	Please refer to " Monthly HF Overall Balance"			
Feb		31.0	925.00	144.97	0.157	Table attached later.			
Mar		28.0	900.16	135.33	0.150				
Apr		31.0	850.00	131.37	0.155				
May		30.0	909.98	139.20	0.153				
Jun		22.0	335.14	50.66	0.151				
Jul		30.0	870.00	138.82	0.160				
Aug		30.0	800.73	130.20	0.163				
Sept		31.0	875.60	137.19	0.157				
Oct		30.0	878.26	135.36	0.154				
Nov		20.0	608.63	91.06	0.150				
Dec		-	-	-					
		314.0	8,883.75	1,378.81	0.155				

* Operating days of a month is recorded from the 26th day of the previous month to 25th day of the month. This is the reason for 31 operating days appeared in April and September.

** Storage of HF is commonly used for the whole enterprise.

Monthly CFC Production and Raw Material Consumption

CFC-12 Production and CTC Consumption

Month	CFC-12 No. of Operating days*	CFC-12 Production	CTC Consump-tion	CTC/ CFC-12 Ratio	CTC Opening Stock**	CTC Procured/ Added	CTC Sold Out	CTC Closing Stock**
Jan	31.0	300.16	389.34	1.297	Please refer to " Monthly CTC Overall			
Feb	31.0	321.95	414.04	1.286	Balance" Table attached later.			
Mar	28.0	517.26	655.72	1.268				
Apr	31.0	600.20	766.14	1.276				
May	30.0	586.07	820.03	1.399				
Jun	22.0	412.72	548.60	1.329				
Jul	30.0	260.62	403.22	1.547				
Aug	29.0	255.19	333.58	1.307				
Sept	31.0	314.65	417.88	1.328				
Oct	30.0	300.27	398.30	1.326				
Nov	31.0	302.39	401.39	1.327				
Dec	21.0	163.35	228.29	1.398				
	345.0	4,334.82	5,776.53	1.333				

* Operating days of a month is recorded from the 26th day of the previous month to 25th day of the month. This is the reason for 31 operating days appeared in February, April, September and November.
** The CTC storage is used commonly by both CFC 11 and CFC 12 production units. Therefore, stock figures are not recorded here.

CFC-12 Production and HF Consumption

Month	CFC-12 No. Of Operating days*	CFC-12 Production	HF Consump-tion	HF/ CFC-12 Ratio	HF Opening Stock	HF Procured/ Added	HF Sold Out	HF Closing Stock
Jan	31.0	300.16	120.67	0.402	Please refer to " Monthly HF Overall			
Feb	31.0	321.95	142.87	0.444	Balance" Table attached later.			
Mar	28.0	517.26	208.32	0.403				
Apr	31.0	600.20	242.36	0.404				
May	30.0	586.07	250.98	0.428				
Jun	22.0	412.72	161.30	0.391				
Jul	30.0	260.62	125.47	0.481				
Aug	29.0	255.19	102.73	0.403				
Sept	31.0	314.65	123.18	0.391				
Oct	30.0	300.27	121.62	0.405				
Nov	31.0	302.39	130.08	0.430				
Dec	21.0	163.35	76.12	0.466				
	345.0	4,334.82	1,805.70	0.417				

* Operating days of a month is recorded from the 26th day of the previous month to 25th day of the month. This is the reason for 31 operating days appeared in February, April, September and November.
** Storage of HF is commonly used for the whole enterprise.

Monthly CFC Production and Raw Material Consumption

CFC-113 Production and PCE Consumption

Month	CFC-113	No. of Operat-ing days*	Production **	PCE Consumption	PCE/ CFC-113 Ratio	PCE Opening Stock	PCE Procured/ Added	PCE Other Uses and Sold Out***	PCE Closing Stock
Jan		31.0	343.32	339.467	0.989	4,000.94	-	1,115.60	2,545.87
Feb		31.0	434.23	439.410	1.012	2,545.87	-	26.97	2,079.49
Mar		28.0	242.64	229.177	0.945	2,079.49	-	150.63	1,699.68
Apr		31.0	166.48	170.508	1.024	1,699.68	-	292.44	1,236.74
May		30.0	16.32	16.451	1.008	1,236.74	3,051.25	354.69	3,916.85
Jun		-	-	-		3,916.85	-	261.96	3,654.89
Jul		30.0	52.67	59.311	1.126	3,654.89	761.36	392.81	3,964.13
Aug		29.0	64.89	72.763	1.121	3,964.13	-	352.09	3,539.28
Sept		31.0	91.24	104.571	1.146	3,539.28	3,113.26	369.97	6,178.00
Oct		30.0	206.28	215.666	1.045	6,178.00	1.00	223.76	5,739.57
Nov		31.0	310.40	330.219	1.064	5,739.57	64.00	138.30	5,335.05
Dec		30.0	196.45	205.511	1.046	5,335.05	-	1,399.59	3,729.95
		332.0	2,124.92	2,183.054	1.027		6,990.87	5,078.81	

* Operating days of a month is recorded from the 26th day of the previous month to the 25th day of the month. This is the reason for 31operating days in February, April, September and November.

** Production refers to the CFC-113 product that is not to be chemically converted. That is to be used as ODS.

*** Refers to all uses other than for Production as mentioned in **, as well as sold out.

Monthly CFC Production and Raw Material Consumption

CFC-113 Production and HF Consumption

Month	CFC-113	No. of Operat-ing days*	Production **	HF Consump-tio n	HF/ CFC-113 Ratio	HF Opening Stock	HF Procured/ Added	HF Sold Out	HF Closing Stock
Jan		31.0	343.32	157.04	0.457	Please refer to "HF Monthly Overall Balance"			
Feb		31.0	434.23	189.38	0.436	Table attached later.			
Mar		28.0	242.64	101.73	0.419				
Apr		31.0	166.48	74.29	0.446				
May		30.0	16.32	7.42	0.455				
Jun		-	-	-					
Jul		30.0	52.67	26.75	0.508				
Aug		29.0	64.89	32.60	0.502				
Sept		31.0	91.24	46.10	0.505				
Oct		30.0	206.28	93.69	0.454				
Nov		31.0	310.40	142.0905	0.458				
Dec		30.0	196.45	90.5010	0.461				
		332.0	2,124.92	961.60	0.453				

-

* Operating days of a month is recorded from the 26th day of the previous month to the 25th day of the month. This is the reason for 31operating days in February, April, September and November.

** Production refers to the CFC-113 product that is not to be chemically converted. That is to be used as ODS.

Monthly CFC Production and Raw Material Consumption

CFC-115 Production and CFC-113 Consumption (Expressed in material tons)

Month	CFC-115	No. of Operat-ing days*	CFC-115 Prod'n (ODS)	CFC-113 Consump-tion (ODS)	CFC113 /CFC115 Ratio**	CFC-113 Opening Stock	CFC-113 Procured /Added ***	CFC 113 for Other Intermediate Uses****	CFC-113 Sold Out (As ODS)	CFC-113 Closing Stock
Jan		-	-	-		165.30	408.82	65.50	106.75	401.87
Feb		10	3.20	8.95	2.798	401.87	460.88	17.70	126.77	709.33
Mar		28	23.20	37.68	1.624	709.33	402.13	121.80	141.00	810.97
Apr		31	25.00	43.70	1.748	810.97	451.98	241.80	123.77	853.68
May		30	25.00	42.85	1.714	853.68	368.03	301.00	147.50	730.36
Jun		21	17.60	30.81	1.751	730.36	257.15	234.20	140.50	582.00
Jul		30	25.00	38.44	1.538	582.00	401.52	310.40	141.50	493.17
Aug		29	25.00	41.71	1.668	493.17	378.00	271.40	168.00	390.06
Sept		31	26.00	42.69	1.642	390.06	414.03	280.10	138.75	342.55
Oct		11	9.85	13.92	1.413	342.55	420.30	200.10	148.04	400.79
Nov						400.79	440.40	130.00	120.00	591.19
Dec						591.19	382.65	186.20	125.04	662.60
		221	179.85	300.75	1.672			2,360.20	1,627.62	

* Operating days of a month is recorded from the 26th day of the previous month to the 25th day of the month. This is the
for 31 operating days in April,and September.

** The ratio in Feb was high due to the start-up of evacuated equipment, But the ratio of the whole year seems normal.

*** Refers to all CFC 113 including both for ODS sales and all intermediate uses.

**** Refers to the CFC-113 that used as intermediates to be chemically converted to other non-ODS products within the enterprise and that supplied to Zhejiang Chemical Institute (B 11) under control for their CFC 114/115 production as well as intermediate that to be chemically converted to non -ODS product(s).

CFC-115 Production and HF Consumption

Month	CFC-115	No. 0f Op'ting days*	CFC-115 Prod'n (ODS)	HF Consump-tion	HF/ CFC-115 Ratio	HF Opening Stock	HF Procured/ Added	HF Sold Out	HF Closing Stock
Jan		-	-	-		Please refer to "Monthly HF Overall Balance"			
Feb		10	3.20	3.42	1.068	Table attached later.			
Mar		28	23.20	14.67	0.632				
Apr		31	25.00	15.30	0.612				
May		30	25.00	16.19	0.648				
Jun		21	17.60	11.97	0.680				
Jul		30	25.00	15.40	0.616				
Aug		29	25.00	16.22	0.649				
Sept		31	26.00	16.23	0.624				
Oct		11	9.85	5.16	0.524				
Nov		-	-	-					
Dec		-	-	-					
		221	179.85	114.56	0.637				

Monthly CFC Production and Raw Material Consumption

Monthly CTC Overall Balance

Month	CTC Consumption for CFC-11	CTC Consumption for CFC-12	CTC Consumption Total	CTC Opening Stock	CTC Procured/ Added	CTC Sold Out	CTC Closing Stock
Jan	1,094.36	389.34	1,483.70	2107.761	1,166.54	5.02	1,785.58
Feb	1,088.91	414.04	1,502.95	1,785.58	1,033.99	19.80	1,296.82
Mar	975.64	655.72	1,631.36	1,296.82	1,093.27	18.00	740.73
Apr	992.46	766.14	1,758.60	740.73	1,080.22	14.40	47.95
May	1,092.46	820.03	1,912.49	47.95	1,909.52	-	44.98
Jun	401.81	548.60	950.41	44.98	1,156.75	-	251.32
Jul	1,032.90	403.22	1,436.12	251.32	1,488.77	-	303.96
Aug	974.96	333.58	1,308.54	303.96	1,428.77	-	424.20
Sept	1,053.81	417.88	1,471.69	424.20	1,306.59	-	259.10
Oct	1,053.04	398.30	1,451.34	259.10	1,700.10	4.60	503.26
Nov	704.78	401.39	1,106.17	503.26	1,512.96		910.04
Dec	-	228.29	228.29	910.04	912.86		1,594.61
	10,465.13	5,776.53	16,241.66		15,790.33	61.82	

Monthly CFC Production and Raw Material Consumption

Monthly Overall HF Balance

Month	HF Consumpt'n for CFC-11	HF Consumpt'n for CFC-12	HF Comsumpt'n for CFC 113 as ODS*	HF Consumpt'n for CFC-115	HF Total Consumpt'n for CFCs	HF Opening Stock	HF Procured/ Added	HF for Other Uses**	HF Closing Stock
Jan	144.65	120.67	157.04	-	422.36	66.07	645.44	279.76	9.39
Feb	149.97	142.87	189.38	3.42	485.63	9.39	753.84	269.23	8.37
Mar	135.33	208.32	101.73	14.67	460.05	8.37	771.82	277.87	42.27
Apr	131.37	242.36	74.29	15.30	463.32	42.27	677.88	250.11	6.72
May	139.20	250.98	7.42	16.19	413.79	6.72	773.80	363.62	3.11
Jun	50.66	161.30	-	11.97	223.93	3.11	494.10	264.70	8.57
Jul	138.82	125.47	26.75	15.40	306.44	8.57	704.30	401.15	5.28
Aug	130.20	102.73	32.60	16.22	281.75	5.28	736.93	377.32	83.13
Sept	137.19	123.18	46.10	16.23	322.70	83.13	640.61	387.11	13.93
Oct	135.36	121.62	93.69	5.16	355.83	13.93	696.11	353.23	0.98
Nov	91.06	130.08	142.09	-	363.23	0.98	752.65	341.19	49.21
Dec	-	76.12	90.50	-	166.62	49.21	432.24	308.83	6.00
	1,383.81	1,805.70	961.60	114.56	4,265.67		8,079.70	3,874.11	

* Refers to HF used for the production of CFC 113 that is to be sold out as commodity, exclusive that as intermediates to be chemiclly converted to other materials.
** Including HF consumed for all non-CFC production within the Enterprise and HF sold out as commodity.

CFC Production Phase Out Verification (Including Gradual Closure)

February 2004

(B 8 Zhejiang Linhai Limin)

A. Plant identification

Name of Enterprise	:	Zhejiang Linhai Limin Chemical Plant
Plant Ref. Number	:	
Sector Plan #	:	22
SRI #	:	B8
Address of the Plant	:	Zhenxing Jie, P.C.317000, Linhai City, Zhejiang Province
Contact person(s) and Functional Title	:	Ms. He Jianmim, General Manager
Telephone Number	:	0576-5177088
Fax Number	:	0576-5178058
E-mail Address	:	IHLM@mail.tzptl.zj.cn

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	Feb. 05,2004
Duration of Visit	:	1.0 day

C. Plant History

Date of Construction 1983

ODS Products	No. of	Capacity in	Production**						
			Baseline Ye	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003 2
CFC 11									
CFC 12	2	3,000	1,365	1,658	1,188	1,364.7	1,364.9	886.9	0
CFC 13	1	50	27	26	27	27	7	27	21.28
CFC 114/115									
Raw Materials Production**									
CTC	No								
HF	No								

*The year from which data is used for approving the ODS production phase out project.

**Till the year prior to the verification.

***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-12 lines closed	:	**2**
Date of CFC production ceased	:	December 22, 2002
Date of dismantling completed	:	January 5, 2003
Verification of destruction of key components by	:	Zhejiang Linhai City Environment Protection Bureau
Reactor tank(s) dismantled and destroyed	:	Yes
Control and monitoring equipm dismantled and destroyed	:	Yes
Pipes dismantled and destroyed	:	Yes
Utilities dismantled and destroyed	:	Yes
Evidence of destruction (photos or videos)	:	Yes, Available
Chance of resuming production	:	No
Assessment by the verification team to be included in the verification report	:	The CFC-12 production units have been closed completely. All the building space in which the CFC-12 production units were installed have been evacuated and used for other new non-CFC production

2. Plant for gradual closure

The production of CFC-12 of the enterprise was completely closed at the end of 2002 and the two CFC-12 production lines have been dismantled in the beginning of 2003. See Section D.1 of this Report as well Annex III **"CHINA CFC PRODUCTION SECTOR COMPLETE CLOSURE PROJECT 2003 VERIFICATION REPORT"**

Annual CFC-13 quotas, production, sales and stocks since the baseline year*

CFC Products (CFC-	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003
Quota***			27	27	27	27	21.3
Opening Stock at beginning of year	0.91	7.91	7.34	2.6	7.9	5.1	3.58
Production	27.00	26.40	26.95	27	27	27	21.28
Sales	20.00	26.97	31.72	21.7	29.8	28.5	24.70
Closing stock at end of year	7.91	7.34	2.57	7.9	5.1	3.58	0.16

*The year from which data is used to approve the ODS production phase out project.

**Till the year of the verification

*** The quota issued in the beginning of 2003 was 27 tons ODP. In order to meet the obligation of china as specified in Annex B Group I of the Montreal Protocol, Chinese Government reduced the quota to 21.3 tons ODP. The difference of 5.7 tons ODP of CFC-13 was transferred to 5.7 tons ODP of CFC-12 of Zhejiang Juhua (B 14) by mutual agreement.

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5	Year 6*
CFC-13	27.00	26.40	26.95	27.0	27	27	21.28
HF/CFC-13	0.888	1.098	1.073	1.122**	1.155	1.128	1.000
CTC/CFC-13	2.843	3.623	3.360	3.713***	3.796	3.821	3.805

* Till the year of the verification

** Obtained indirectly by (ratio CFC-12/CFC-13) × (ratio HF/ CFC-12)

*** Obtained indirectly by (ratio CFC-12/CFC-13) × (ratio CTC/ CFC-12)

Since 2003, the CFC12 feedstock for CFC 13 is supplied from Juhua Fluoro-chemical (B14), the ratio HF/CFC 12 and CTC/CFC 12 refers to that of Juhua Fluoro-chemical.

Operational days per year

Type of Production	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-13	135	157	173	228	277	224	186

* Till the year of the verification

Monthly CFC Production and Raw Material Consumption

CFC-13 Production and CFC-12 Consumption

Month	CFC-13	No. of Operating days*	CFC-13 Production	CFC-12 Consump-tion	CFC-12/ CFC-13 Ratio**	CFC-12 Opening Stock	CFC-12 Procured/ Added	CFC-12 Sold Out	CFC-12 Closing Stock
Jan		-	-	-		-		-	
Feb		8.0	0.35	1.24	3.534	-	1.54	-	0.30
Mar		29.0	3.71	10.02	2.700	0.30	9.90	-	0.19
Apr		31.0	4.03	10.59	2.631	0.19	20.96	-	10.56
May		25.0	2.60	7.01	2.700	10.56	14.40	-	17.95
Jun		31.0	4.41	11.91	2.700	17.95	11.21	-	17.26
Jul		30.0	3.34	9.01	2.700	17.26	-	-	8.25
Aug		-	-	-		8.25	-	-	8.25
Sept		11.0	0.88	2.36	2.691	8.25	-	-	5.89
Oct		14.0	1.69	4.54	2.688	5.89	-	-	1.35
Nov		-	-	-		1.35	-	-	1.35
Dec		7.0	0.286	1.35	4.720	1.35	-	-	-
		186.0	21.28	58.01	2.726		58.01	-	

***** Operating days of a month is recorded from the 26 th day of the previous month to the 25 th day of the month. This is the reason or 31 operating day appeared in April and June.

**The CFC-12/CFC13 ratio in February and December is higher than the year average. The enterprise's-management explained that, during the stop of a campaign, the refrigeration system was shut off, and the remaining reactant mixture was to be dischargedinto pressure cylinders to avoid the over pressure in the reactor resulted in by the temperature rising. Thus, at the starting of a new campaign, they must fill more reactant into reactor. In September, the refrigeration system operation was maintained and such situation did not happen.

CFC Production Phase Out Verification (Including Gradual Closure)
February 2004
(B 11 Zhejiang Chemical Institute)

Plant identification

Name of Enterprise	:	Zhejiang Chemical Industry Research Institute
Plant Ref. Number		
Sector Plan #	:	10
SRI #	:	B11
Address of the Plant	:	No. 926, Xixi Lu, P.C. 310023, Hangzhou City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Zhang Jianjun, Deputy Director
Telephone Number	:	0517-5229414
Fax Number	:	0517-5221129
E-mail Address	:	

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	Feb 06-07, 2004
Duration of Visit	:	1.5 day

C. Plant History

Date of Construction 1990									
ODS Products ODS)	No. of l	Capacity in B	Production**						
			Baseline Ye	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003
CFC 114/ 115	1	100	10.6/ 120.3	20.7/ 102.2	0./ 120	7.33/ 119.6	6.8/ 127	29/ 90	0/ 131.84
Raw Materials Production**									
CTC									
HF									

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified
1. Plant for Complete Closure

No. of CFC-11/12 lines closed : N.A.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N.A.

Reactor tank(s) dismantled and destroyed : N.A.

Control and monitoring equipm dismantled and destroyed : N.A.

Pipes dismantled and destroyed : N.A.

Utilities dismantled and destroyed : N.A.

Evidence of destruction (photos or videos) :

Chance of resuming production : N.A.

Assessment by the verification team to be included in the verification report : N.A.

2. Plant for Gradual Closure

Annual CFC-114/115 quotas, production, sales and stocks since the baseline year*

CFC Products (CFC	Baseline Year*	Year 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota***			11	11	6.8	29	0
Opening Stock at beginning of year	7.96	15.25	20.60	17.52	20.74	23.565	35.466
Production	10.60	20.70	0	7.33	6.83	28.974	0
Sales	3.31	15.35	3.08	4.11	4.01	17.073	4.041
Closing stock at end of year	15.25	20.60	17.52	20.74	23.56	35.466	3.425

CFC Products (CFC expressed as OD	Baseline Year*	Year 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
Quota***			120	120	127***	90	138.333
Opening Stock at beginning of year	3.64	40.27	74.81	49.45	79.21	84.887	95.823
Production	120.30	102.20	119.98	119.64	127	89.996	131.84
Sales	83.67	67.66	145.34	89.88	121.3	79.060	157.55
Closing stock at end of year	40.27	74.81	49.45	79.21	84.9	95.823	70.113

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification
*** In the beginning of 2003, the quota for CFC-114 is issued as 11 and for CFC-115 is 120 (ODS, equivalent to 72 ODP); However, based upon the market situation, the enterprise applied and the Chinese Government approved to change the quota for CFC-114 to 0 and the quota for CFC-115 to 138.333 (ODS, equivalent to 83 ODP).

Annual HF/CFC-114 (CFC 115) and CFC-113/CFC-114 (CFC-115) ratios

Ratio	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-114	10.60	20.70	0	7.33	6.83	28.974	0
HF/CFC-114		0.41	0	0.337	0.413	0.153	
CFC-113/CFC-114		1.200	0	1.207	1.304	1.202	
CFC-115	120.30	102.20	119.98	119.64	127	89.996	131.84
HF/CFC-115		0.569	0.479	0.482	0.417	0.362	0.368
CFC-113/CFC-115		1.549	1.665	1.564	1.387	1.341	1.350

* Till the year of the verification

Operational days per year

Type of Production	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-114	**	**	**	**	**	**	**
CFC-115	330	248	266	303	249	201	221

*Till the year of the verification.
** The CFC-114 production uses the same production unit as the CFC-115 production. In 2000, among the total 303 operating days, 20 days have the CFC-114 production. In 2001, among the total 249 operating days, 8 day have the co-production of CFC-114. In 2002 shared 45 operating days in total of 201. In 2003, no CFC 114 was produced, and all operational day refers to CFC 115 production.

Monthly CFC Production and Raw Material Consumption

CFC-114/115 Production and CFC-113 Consumption **(Expressed in ODS)**

Month	CFC-114/115	No. of Opera-ting days*	CFC-114 Produc-tion	CFC-115 Produc-tion	CFC-113 consump-tion for CFC-114	CFC-113 Consump-tion for CFC-115	CFC-113 /CFC-114 Ratio	CFC-113 /CFC-115 Ratio	CFC-113 Opening Stock	CFC-113 Procured/ Added ****	CFC-113 for Other Non-CFC Products	CFC-113 Sold Out****	CFC-113 Closing Stock
Jan		-	-	-	-	-			-	-	-	-	-
Feb		-	-	-	-	-			-	-	-	-	-
Mar		-	-	-	-	-			-	-	-	-	-
Apr		-	-	-	-	-			-	10.00	-	-	10.00
May		7.0	-	-	-	-			10.00	-	-	-	10.00
Jun		31.0	-	23.78	-	33.20		1.396	10.00	50.00	-	-	26.80
Jul		30.0	-	21.48	-	28.80		1.341	26.80	28.00	-	-	26.00
Aug		31.0	-	11.66	-	16.00		1.373	26.00	10.00	-	-	20.00
Sept		31.0	-	14.21	-	19.50		1.372	20.00	20.00	-	-	20.50
Oct		30.0	-	19.75	-	26.00		1.316	20.50	30.00	-	-	24.50
Nov		31.0	-	24.27	-	32.50		1.339	24.50	20.00	-	-	12.00
Dec		30.0	-	16.70	-	22.00		1.317	12.00	10.00	-	-	-
		221.0	-	131.84	-	178.00		1.350		178.00	-	-	

* The operating days are recorded from the 26th of previous month to the 25th of the month.

Monthly CFC Production and Raw Material Consumption

CFC-114/CFC-115 Production (expressed in ODS) and HF Consumption

Month	CFC-114 /CFC-115	No. Of Opera-ting days*	CFC-114 Produc-tion	CFC-115 Produc-tion	HF Consump-tion for CFC-114	HF Consump-tion for CFC-115	HF/ CFC-114 Ratio	HF/ CFC-115 Ratio	HF Opening Stock	HF Procured/ Added	HF for Other Uses**	HF Closing Stock
Jan		-	-	-	-	-			0.66	27.39	25.41	2.64
Feb		-	-	-	-	-			2.64	28.05	28.05	2.64
Mar		-	-	-	-	-			2.64	23.43	24.75	1.32
Apr		-	-	-	-	-			1.32	31.68	30.69	2.31
May		7.0	-	-	-	-			2.31	14.52	14.85	1.98
Jun		31.0	-	23.78	-	9.02		0.379	1.98	28.91	12.23	9.64
Jul		30.0	-	21.48	-	8.14		0.379	9.64	50.21	37.47	14.24
Aug		31.0	-	11.66	-	4.29		0.368	14.24	25.60	32.15	3.40
Sept		31.0	-	14.21	-	5.28		0.372	3.40	44.33	31.72	10.73
Oct		30.0	-	19.75	-	7.59		0.384	10.73	18.54	19.58	2.10
Nov		31.0	-	24.27	-	8.25		0.340	2.10	33.17	19.21	7.81
Dec		30.0	-	16.70	-	5.94		0.356	7.81	19.86	21.31	0.42
		221.0	-	131.84	-	48.51		0.368		345.69	297.42	

* The operating day are recorded from the 26th of previous month to the 25th of the month.

** Means HF used for other non CFC products within the enterprise.

CFC Production Phase Out Verification (Including Gradual Closure)
February 2004
(B12 Zhejiang Donyang)

A. Plant identification

Name of Enterprise	:	Zhejiang Dongyang Chemical Plant
Plant Ref. Number	:	
Sector Plan #	:	7
SRI #	:	B12
Address of the Plant	:	Wunning Dong Lu, P.C. 322100, Dongyang City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Wang Tian'e, Deputy Director
Telephone Number	:	0759-6623201
Fax Number	:	0759-6632697
E-mail Address	:	Zjfcc@public.dy.jhptt.zj.cn

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F. A. Vogelsberg
Functional Title	:	Consultant, The World bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	Feb. 04, 2004
Duration of Visit	:	1 day

C. Plant History

Date of Construction 1979									
ODS Produ	No. of l	Capacity in	Production**						
			Baseline Ye	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6 2003**
CFC 11									
CFC 12	1	5,000	2,219	2,751	2,063	2218.5	2218.9	1,740.7	1,442.22
Raw Materials Production***									
CTC	0	0	0	0	0	0	0	0	0
HF	3	15,000	10,872	11,065	10,415	11,744	13,862	16,599	16,481

*The year from which data is used for approving the ODS production phase out project.

**Till the year prior to the verification.

***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

Plant for Complete Closure

No. of CFC-11/12 lines closed : N.A.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N.A.

Reactor tank(s) dismantled and destroyed : N.A.

Control and monitoring equipm dismantled and destroyed : N.A.

Pipes dismantled and destroyed : N.A.

Utilities dismantled and destroyed : N.A.

Evidence of destruction (photos or videos) : N.A.

Chance of resuming production : N.A.

Assessment by the verification team to be included in the verification report : N.A.

2. Plant for gradual closure

Annual CFC-12 quotas, production, sales and stocks since the baseline year*

CFC Produ (CFC-11, CF	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6** 2003
Quota			2,053	2,219	2,219	1,741	1,444
Opening Stock at beginning of year	259	202	1,120	836	1,631.9	1,051.8	1,355.41
Production	2,219	2,751	2,053	2,218.5	2,218.9	1740.7	1,442.22
Sales	2,276	1,833	2,337	1,422.6	2,799	1,437.1	1,755.84
Closing stock at end of year	202	1,120	836	1,631.9	1,051.8	1,355.4	1,041.79

*The year from which data is used to approve the ODS production phase out project.

**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003	Year 7
CFC-12	2,219	2,715	2,053	2,218.5	2,218.9	1,740.7	1,442.22	
HF/CFC-12	0.342	0.365	0.367	0.375	0.377	0.396	0.416	
CTC/CFC-12	1.325	1.368	1.367	1.357	1.357	1.413	1.396	

* Till the year of the verification

Operational days per year

Type of Production	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003	Year 7
CFC-12	319	277	229	235	242.5	238.5	319	

*Till the year of the verification

In 2003, due to restriction of daily power supply, the enterprise had to reduce the daily production load and extend the operational period. Details see Annex of this Report.

Monthly CFC Production and Raw Material Consumption

CFC-12 Production and CTC Consumption

Month	CFC-12	No. Of Operat-ing days	CFC-12 Production	CTC Consump-tion	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ Added	CTC Sold Out	CTC Closing Stock
Jan		25.0	88.82	135.36	1.524	277.31	220.84	0.13	362.66
Feb		25.0	105.71	146.36	1.384	362.66	314.91	0.31	530.90
Mar		25.5	101.15	138.39	1.368	530.90	104.58	-	497.09
Apr		27.0	108.46	150.18	1.385	497.09	-	0.21	346.70
May		28.5	112.91	154.70	1.370	346.70	-	-	192.00
Jun		27.0	98.95	139.03	1.405	192.00	86.91	0.03	139.84
Jul		27.5	116.48	161.61	1.387	139.84	111.43	-	89.66
Aug		25.5	120.66	163.68	1.357	89.66	185.95	0.03	111.90
Sept		27.0	126.32	177.27	1.403	111.90	197.93	0.29	132.27
Oct		28.0	155.20	215.80	1.390	132.27	168.22	-	84.69
Nov		25.5	161.00	226.12	1.404	84.69	214.29	-	72.86
Dec		27.5	146.54	204.39	1.395	72.86	453.29	-	321.76
		319.0	1,442.22	2,012.89	1.396		2,058.35	1.01	

Monthly Overall HF Balance of the Enterprise

Month	CFC-12	HF Added to CFC Unit	HF Opening Stock	HF Procured/ Added	HF Sold Out and Others*	HF Closing Stock
Jan		39.60	0.67	1,273.61	1,183.60	51.08
Feb		42.24	51.08	1,074.12	1,075.16	7.80
Mar		39.60	7.80	1,602.04	1,565.69	4.56
Apr		46.20	4.56	1,467.13	1,408.83	16.66
May		47.52	16.66	1,387.47	1,346.81	9.80
Jun		43.56	9.80	1,462.74	1,420.23	8.75
Jul		46.20	8.75	1,250.11	1,182.86	29.80
Aug		52.80	29.80	1,172.79	1,138.18	11.61
Sept		54.12	11.61	1,203.16	1,137.65	22.99
Oct		67.32	22.99	1,477.02	1,296.45	136.24
Nov		71.28	136.24	1,536.82	1,591.86	9.93
Dec		52.80	9.93	1,573.51	1,471.77	58.87
		603.24		16,480.51	15,819.08	

* Including HF for all other non-CFC uses within the Enterprise and HF sold out as commodity.

CFC-12 Production and HF Consumption

Monthly HF Balance of CFC 12 Production Unit

Started from 2003, a separate HF Storage was set-up for CFC 12 production, and the Monthly HF Balance is as follows:

Month	CFC-12	No. Of Operating days	CFC-12 Production	HF Consump-tion	HF/ CFC-12 Ratio	HF Opening Stock of CFC Unit	HF Added to CFC Unit	HF Closing Stock of CFC Unit
Jan		25.0	88.82	37.02	0.417	-	39.60	2.58
Feb		25.0	105.71	41.00	0.388	2.58	42.24	3.82
Mar		25.5	101.15	39.66	0.392	3.82	39.60	3.76
Apr		27.0	108.46	43.71	0.403	3.76	46.20	6.25
May		28.5	112.91	46.84	0.415	6.25	47.52	6.92
Jun		27.0	98.95	40.94	0.414	6.92	43.56	9.55
Jul		27.5	116.48	46.18	0.396	9.55	46.20	9.57
Aug		25.5	120.66	57.37	0.475	9.57	52.80	5.00
Sept		27.0	126.32	52.12	0.413	5.00	54.12	7.00
Oct		28.0	155.20	68.32	0.440	7.00	67.32	6.00
Nov		25.5	161.00	68.28	0.424	6.00	71.28	9.00
Dec		27.5	146.54	59.03	0.403	9.00	52.80	2.77
		319.0	1,442.22	600.47	0.416		603.24	

Production CFC Phase Out Verification (Including Gradual Closure)

February 2004

(B 14 Zhejiang Juhua)

A. Plant identification

Name of Enterprise	:	Zhejiang Juhua Fluoro-chemical Co. Ltd.
Plant Ref. Number	:	
Sector Plan #	:	3
SRI #	:	B14
Address of the Plant	:	Kecheng Qu, P.C. 324004, Guzhou City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Cai Jian Qun, Acting General Manager
Telephone Number	:	0570-3097543
Fax Number	:	0570-3098687
E-mail Address	:	Qzfh@ppp.qzptt.zj.cn

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	February 02-03, 2004
Duration of Visit	:	2 days

C. Plant History

Date of Construction 1993									
ODS Products	No. of	Capacity in B	Production**						
			Baseline Y	Year 1 1998	Year 2 1999	Year 3 2(	Year 4 2001	Year 5 2002	Year 6** 2003
CFC 11/12 (Combined)	1	4,000/ 8,000	4,339/ 7,7(	4,121/	3,376/	4,339/ 7,	4,827.3/ 7,706.1	4,489/ 7,1	3,947.49/ 7,4(
Raw Materials Production									
CTC	1	12,000***	11,659	10,751	13,140	13,479	15,697	17,217	16,204
HF	1	10,000 ****	8,929	10,614	11,361	13,290	14,994	16,080	15,384

*The year from which data is used for approving the ODS production phase out project.

**Till the year prior to the verification.

*** The capacity of total chloromethanes is 30,000. The final capacity of the chlorometnanes is 70,000 with CTC capacity of 20,000.

**** Has been expanded to 15,000.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : N.A.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N.A.

Reactor tank(s) dismantled and destroyed : N.A.

Control and monitoring equipment dismantled a destroyed : N.A.

Pipes dismantled and destroyed : N.A.

Utilities dismantled and destroyed : N.A.

Evidence of destruction (photos or videos) : N.A.

Chance of resuming production : N.A.

Assessment by the verification team to be included in the verification report : N.A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

CFC Products (CF	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6** 2003
Quota			3,375	4,339	4,827.5	4,489	3,948
Opening Stock at beginning of year	85	15	419	0	0	0	565.04
Production	4,339	4,121	3,376	4,339	4,827.3	4,489	3,947.49
Sales	4,409	3,717	3,599	4,339	4,827.3	3,924	3,360.55
Closing stock at end of year	15	419	0	0	0	565	1,151.98

CFC Products (CF	Baseline Year*	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6** 2003
Quota			6,325	7,760	7,706.5	7,157	7,406.7***
Opening Stock at beginning of year	20	2	420	4	6	5.7	96.14
Production	7,760	7,632	6,325	7,759	7,706.1	7,157	7,406.03
Sales	7,778	7,214	6,741	7,757	7,706.4	7,000.6	6,683.10
Closing stock at end of year	2	420	4	6	5.7	96.1	819.06

*The year from which data is used to approve the ODS production phase out project.

**Till the year of the verification

*** In the annual Program 2003, the quota for CFC-12 is issued as 7,401 tons ODP. However, since Zhejiang Linhai Limin Chemical Plant (SRI# B 8) has to reduce the CFC-13 quota from 27 to 21.3 tons ODP pursuant to the Montreal Protocol, 5.7 tons ODP was transferred to Zhejiang Juhua for CFC-12 through mutual agreement.

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11	4,339	4,121	3,376	4,339	4,827.3	4,489	3,947.49
HF/CFC-11	0.150	0.151	0.150	0.157	0.156	0.160	0.161
CTC/CFC-11	1.151	1.152	1.150	1.215	1.209	1.208	1.229
CFC-12	7,760	7,632	6,325	7759	7,706.1	7,157	7,406.03
HF/CFC-12	0.340	0.341	0.341	0.357	0.354	0.363	0.367
CTC/CFC-12	1.304	1.309	1.304	1.381	1.374	1.372	1.396

Operational days per year

Type of Production	Baseline 1997	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002	Year 6* 2003
CFC-11	341	347	335	346	319	319	345
CFC-12	(341)**	(347)**	(335)**	(346)**	(319)**	(319)	(345)

*Till the year of the verification.

** Operated together with CFC-11 in a combined production line.

Monthly CFC Production and Raw Material Consumption

CFC-11 and CFC 12 Production and CTC Consumption

Month	No. of Opera-ting days*	CFC-11 Production	CFC-12 Production	CFC-12 for Feedstock **	CTC Consump-tion for CFC-11	CTC Consump-tion for CFC-12	CTC Consump-tion for feedstock CFC 12	Total CTC Consump-tion for all CFC-12***	CTC/ CFC-11 Ratio	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ Added	CTC Sold Out and other usess	CTC Closing Stock
Jan	16.0	185.59	346.04	-	230.23	487.53	-	487.53	1.241	1.409	1,645.23	954.41	290.48	1,591.40
Feb	37.0	460.12	799.11	-	564.09	1,112.64	-	1,112.64	1.226	1.392	1,591.40	1,808.39	278.02	1,445.04
Mar	30.0	373.46	659.09	9.90	462.70	927.40	13.93	941.33	1.239	1.407	1,445.04	1,574.46	350.77	1,264.71
Apr	30.0	417.46	617.38	22.50	509.96	856.54	31.22	887.75	1.222	1.387	1,264.71	1,313.10	173.25	1,006.85
May	30.0	418.70	679.20	14.40	514.81	948.44	20.11	968.55	1.230	1.396	1,006.85	1,163.84	211.75	475.58
Jun	29.0	311.32	641.55	11.21	383.12	896.66	15.67	912.33	1.231	1.398	475.58	1,372.76	211.30	341.59
Jul	31.0	239.21	653.52	-	291.64	904.88	-	904.88	1.219	1.385	341.59	1,162.60	93.00	214.68
Aug	30.0	262.77	526.91	-	324.77	739.62	-	739.62	1.236	1.404	214.68	1,367.39	70.75	446.93
Sept	29.0	372.53	625.70	-	459.12	875.79	-	875.79	1.232	1.400	446.93	1,902.38	218.00	796.40
Oct	25.0	290.51	473.99	-	360.52	668.06	-	668.06	1.241	1.409	796.40	1,172.60	211.00	729.42
Nov	29.0	343.29	678.85	-	419.39	941.88	-	941.88	1.222	1.387	729.42	1,336.87	195.07	509.94
Dec	29.0	272.53	704.69	-	332.69	977.00	-	977.00	1.221	1.386	509.94	1,074.94	26.00	249.20
	345.0	3,947.49	7,406.03	58.01	4,853.03	10,336.43	80.93	10,417.35	1.229	1.396	249.20	16,203.74	2,329.39	

* According to the notice of local statistics bureau, the production statistics of January 2003 was to be terminated at Jan 19 Starting from Jan 20 the production will be classified as happened in February. This is the reason for 37 operating days in February.

** Refers to CFC-12 produced for feedstock of CFC-13 production of Linhai Limin Chemical Plant (B8). Not used as ODS.

*** Including CTC consumption for both CFC-12 as ODS and CFC-12 as feedstock for Linhai Limin Chemical Plant.

Monthly CFC Production and Raw Material Consumption

CFC-11 and CFC 12 Production and HF Consumption

Month	No. of Opera-ting days*	CFC-11 Production	CFC-12 Production	CFC-12 for Feedstock **	HF Consump-tion for CFC-11	HF Consump-tion for CFC-12	HF Consump-tion for feedstock CFC 12	Total HF Consump-tion for all CFC-12***	HF/ CFC-11 Ratio	HF/ CFC-12 Ratio	HF Opening Stock	HF Procured/ Added	HF Sold Out and Other Uses	HF Closing Stock
Jan	16.0	185.59	346.04	-	30.01	127.22	-	127.22	0.162	0.368	463.91	1,133.33	852.47	587.54
Feb	37.0	460.12	799.11	-	73.42	289.87	-	289.87	0.160	0.363	587.54	2,086.12	1,546.56	763.81
Mar	30.0	373.46	659.09	9.90	59.70	239.60	3.60	243.19	0.160	0.364	763.81	1,785.16	1,640.10	605.98
Apr	30.0	417.46	617.38	22.50	67.36	226.47	8.25	234.72	0.161	0.367	605.98	1,654.90	1,175.12	783.68
May	30.0	418.70	679.20	14.40	68.12	251.23	5.33	256.55	0.163	0.370	783.68	1,725.79	1,556.38	628.42
Jun	29.0	311.32	641.55	11.21	50.61	237.10	4.14	241.25	0.163	0.370	628.42	1,649.33	1,463.21	522.69
Jul	31.0	239.21	653.52	-	38.55	239.38	-	239.38	0.161	0.366	522.69	1,672.93	1,448.24	469.46
Aug	30.0	262.77	526.91	-	42.61	194.23	-	194.23	0.162	0.369	469.46	1,476.65	1,199.80	509.47
Sept	29.0	372.53	625.70	-	60.10	229.46	-	229.46	0.161	0.367	509.47	1,693.33	1,420.55	492.69
Oct	25.0	290.51	473.99	-	47.30	175.46	-	175.46	0.163	0.370	492.69	1,450.54	1,361.23	359.24
Nov	29.0	343.29	678.85	-	55.12	247.79	-	247.79	0.161	0.365	359.24	1,336.12	1,119.48	272.98
Dec	29.0	272.53	704.69	-	43.94	258.31	-	258.31	0.161	0.367	272.98	1,754.59	1,263.08	462.23
	345.0	3,947.49	7,406.03	58.01	636.83	2,716.10	21.32	2,737.42	0.161	0.367		19,418.79	16,046.21	

* According to the notice of local statistics bureau, the production statistics of January 2003 was to be terminated at Jan 19.
Starting from Jan 20 the production will be classified as happened in February. This is the reason
for 37 operating days in February.
** Refers to CFC-12 peoduced for feedstock of CFC-13 production of Linhai Limin Chemical Plant (B8). Not used as ODS.
*** Including both CFC-12 as ODS and CFC-12 as feedstock for Linhai Limin Chemical Plant.

CFC Production Phase-out Verification (Complete Closure)
January 2003
(CFC-12, A 13 Guangdong Xiansheng)

A. Plant identification

Name of Enterprise : Guangdong Zengcheng Xiangsheng Chemical Co. Ltd**.**

Plant Ref. No.

Sector Plan # : 36

SRI # : **A 13**

Address of the Plant : Zhuchun Farm, P.C. 511370, Zengcheng City, Guangdong Province

Contact person(s) and Functional Title : Mr. Ouyang Shiming, General Manager

Telephone Number : 020-82854060

Fax Number : 020-82852815

Email Address

B. Verification

Team Composition : 3

Leader : 1

Name : F.A. Vogelsberg

Functional Title : Consultant, The World Bank

Member(s) : 2

Name : Wu Ning/ Hua Zhangxi

Functional Title : Financial Analyst/ Technical Consultant, The World Bank

Date of Plant Visit : January 17-18, 2003

Duration of Visit : 1 1/2 days (inclusive inspection of production in 2002 and complete closure in 2003 Annual Program)

C. Plant History

Date of Construction 1994								
ODS Products	No. of Lines	Capacity in Baseline	Production**					
			Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001 201	Year 5** 2002
CFC 11								
CFC 12	1	3,000	1,100	1,834	1,601	1,098	1,099.4	620.9
CFC 113								
CFC 114/115								
Raw Materials Production***								
HF								
CTC								

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

Plant for Complete Closure

No. of CFC-11/12 lines closed	:	1
Date of CFC production ceased	:	December 26, 2002
Date of dismantling completed	:	January 2, 2003
Verification of destruction of key components by	:	Guangdong Zengcheng City, Environment Protection Bureau. Certificate was issued on Mar. 25, 2003
Reactor tank(s) dismantled and destroyed	:	Yes
Control and monitoring equipment dismantled a destroyed	:	Yes
Pipes dismantled and destroyed	:	Yes
Utilities dismantled and destroyed	:	Yes
Evidence of destruction (photos or videos)	:	Yes, Available
Chance of resuming production	:	No
Assessment by the verification team to be included in the verification report	:	Closed completely. All the building in which the CFC-12 production unit was installed has been evacuated.

CFC Production Phase Out Verification (Complete Closure)
January 2003
(CFC-12, B 8 Zhejiang Linhai Limin)

A. Plant Identification

Name of Enterprise	:	Zhejiang Linhai Limin Chemical Plant
Plant Ref. Number	:	
Sector Plan #	:	22
SRI #	:	B8
Address of the Plant	:	Zhenxing Jie, P.C.317000, Linhai City, Zhejiang Province
Contact person(s) and Functional Title	:	Ms. He Geping, Vice General Manager
Telephone Number	:	0576-5177088
Fax Number	:	0576-5178055
E-mail Address	:	IHLM@mail.tzptl.zj.cn

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Wu Ning/ Hua Zhangxi
Functional Title	:	Financial Analyst/ Technical Consultant, The World Bank
Date of Plant Visit	:	Jan 20-21 2003
Duration of Visit	:	1 1/2 days (inclusive inspection of Production in 2002 and complete closure of CFC-12 production lines in 2003 Annual Program)

C. Plant History

Date of Construction 1983								
ODS Products	No. of Lines	Capacity in Baseline Year	Production**					
			Baseline Year	Year 1 1998	Year 2 1999	Year 3 2000	Year 4 2001	Year 5 2002
CFC 11								
CFC 12	2	3,000	1,365	1,658	1,188	1,364.7	1,364.9	886.9
CFC 13	1	50	27	26	27	27	7	27
CFC 114/115								
Raw Materials Production**								
CTC	No							
HF	No							

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

Plant for Complete Closure

No. of CFC-11/12 lines closed	:	2
Date of CFC production ceased	:	December 22, 2002
Date of dismantling completed	:	January 5, 2003
Verification of destruction of key components by	:	Zhejiang Linhai City Environment Protection Bureau
Reactor tank(s) dismantled and destroyed	:	Yes
Control and monitoring equipment dismantled and destroyed	:	Yes
Pipes dismantled and destroyed	:	Yes
Utilities dismantled and destroyed	:	Yes
Evidence of destruction (photos or videos)	:	Yes, Available
Chance of resuming production	:	No
Assessment by the verification team to be included in the verification report	:	The CFC-12 production units have been closed completely. All the building space in which the CFC-12 production units were installed have been evacuated and used for other new non-CFC production