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

### 项目提案：印度尼西亚

本文件载有基金秘书处对以下项目提案的评论和建议：

#### 逐步淘汰

- 印度尼西亚逐步淘汰氟氯化碳的国家计划包括以下行业计划：
  - 气雾剂行业剩余氟氯化碳的逐步淘汰 开发计划署，世界银行
  - 泡沫塑料行业剩余氟氯化碳的逐步淘汰 世界银行  
(第一期第二次付款)
  - 制冷行业氟氯化碳的逐步淘汰 (第三期) 开发计划署，世界银行
  - 溶剂行业最终逐步淘汰消耗臭氧层物质的计划 工发组织

## 项目评价表——多年度项目

## 印度尼西亚

项目名称

双边/执行机构

国家逐步淘汰氟氯化碳计划	开发计划署(牵头机构)
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次级项目名称

(a) 气雾剂行业剩余氟氯化碳的逐步淘汰	开发计划署, 世界银行
(b) 泡沫塑料行业剩余氟氯化碳的逐步淘汰(第一期第二次付款)	世界银行
(c) 制冷行业氟氯化碳的逐步淘汰(第三期)	开发计划署, 世界银行
(d) 溶剂行业最终逐步淘汰消耗臭氧层物质的计划	工发组织

国家协调机构:

环境部

项目所述消耗臭氧层物质的最新报告消费数据

A: 第七条数据(ODP吨, 2003年, 截至2004年10月)

CFCs	4,289.3	TCA	10.7
CTC	16.5		

B: 国家方案行业数据(ODP吨, 2003年, 截至2004年10月)

ODS	泡沫塑料	制冷	气雾剂	溶剂		
CFCs	791.34	3,193.3	766.3	78.4		
CTC				16.5		
TCA				10.7		

符合供资条件的剩余氟氯化碳消费量(ODP吨)

258.5

本年度业务计划: 资金总额为4,166,200美元: 共逐步淘汰758.9 ODP吨。

项目数据	2002	2003	2004	2005	2006	2007	2008	总计
履约进度标志	8,332.7	8,332.7	<b>8,332.7</b>	4,166.4	4,166.4	1,249.9	1,249.9	
附件A 第一类物质的可允许的最大年度消费量(ODP吨)	N/A	6,435.0	<b>5,656.0</b>	3,990.0	2,441.0	1,232.0	30.0+++	
现有项目的年度减少量(ODP吨)	468.0	559.0	<b>976.0</b>	652.0	300.0	100.0	-	3,055.0
气雾剂行业的年度 CFC 逐步淘汰目标—开发计划署(ODP吨)	-	-	<b>80.0</b>	-	-	-	-	80.0
气雾剂行业的年度 CFC 逐步淘汰目标—世界银行(ODP吨)	-	-	-	-	-	180.0	-	180.0
泡沫塑料行业的年度 CFC 逐步淘汰目标—世界银行(ODP吨)	-	-	-	130.0	156.0	66.0	-	352.0
(ODP吨)制冷生产行业的年度 CFC 逐步淘汰目标—开发计划署(ODP吨)	-	-	<b>300.0</b>	300.0	300.0	241.0	-	1,141.0
制冷维修行业的年度 CFC 逐步淘汰目标—开发计划署(ODP吨)	-	-	<b>200.0</b>	300.0	322.0	250.0	-	1,072.0
汽车空调行业的年度 CFC 逐步淘汰目标—世界银行(ODP吨)	-	220.0	<b>110.0</b>	110.0	110.0	365.0	-	915.0
溶剂行业的年度 CFC 逐步淘汰目标—工发组织(ODP吨)++	-	-	-	57.0	21.0	-	-	78.0
通过行业计划实现的年度总减少量(ODP吨)	-	220.0	<b>690.0</b>	897.0	909.0	1,102.0	-	3,848.0
附件A 第一类物质的年度总减少量(ODP吨)	468.0	779.0	<b>1,666.0</b>	1,549.0	1,209.0	1,202.0	-	6,903

项目数据	2002	2003	2004	2005	2006	2007	2008	总计
<b>项目费用 (美元)</b>								
开发计划署 (气雾剂)			<b>224,000</b>					
支助费用			<b>13,440</b>					
世界银行 (气雾剂)			<b>371,910</b>					
支助费用			<b>27,893</b>					
世界银行 (泡沫塑料)	-	-	<b>1,725,000+</b>	1,050,000	147,564	35,000	-	2,957,564
支助费用	-	-	<b>129,375</b>	78,750	11,067	2,625	-	221,817
开发计划署 (制冷生产)	1,288,000	2,200,000*	<b>1,762,000</b>	750,000	217,000	181,000	-	6,398,000
支助费用	111,920	194,000	<b>156,900</b>	67,500	19,530	16,290		566,140
开发计划署 (制冷维修)	2,196,758	1,805,987	<b>500,000</b>	250,000	159,555	-	-	4,912,300
支助费用	195,708	160,939	<b>43,400</b>	21,300	13,160	-	-	434,507
世界银行 (空调制造)	1,369,800	1,347,300	<b>1,347,300</b>	126,800	125,800	-	-	4,317,000
支助费用	121,962	119,937	<b>119,937</b>	10,092	10,002	-	-	381,930
工发组织 (溶剂)			<b>1,464,733</b>					1,464,733
支助费用			<b>108,974</b>					108,974
年度分期拨款总额 (美元)	4,854,558	5,353,287	<b>7,394,943</b>	2,176,800	649,919	216,000	-	20,465,507
支助费用总额 (美元)	429,590	474,876	<b>599,919</b>	177,642	53,759	18,915	-	1,754,701
多边基金费用总额	5,284,148	5,828,163	<b>7,994,862</b>	2,354,442	703,678	234,915	-	22,400,208

**资金要求：** 核准了 7,294,943 美元和机构支助费用 592,419 美元，注意到第四十二次会议核准从 2004 年期泡沫塑料行业款项中预付 100,000 美元和 7,500 美元支助费用。

<b>秘书处的建议</b>	<b>供个别审议</b>
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注：

\* 2003 年 7 月从第二期拨款 2,200,000 美元中预付了 600,000 美元。

+ 在执行委员会第四十二次会议上预付了 100,000 美元。

++ 溶剂行业的逐步淘汰目标 (工发组织) 还包括 5.6 ODP 吨 TCA 和 16.5 ODP 吨 CTC，这在上表中没有反映。2005 和 2006 年将分别逐步淘汰 3.0 ODP 吨和 2.6 ODP 吨 TCA。2005 年将逐步淘汰 16.5 ODP 吨 CTC。

+++用于生产计量吸入器的符合资助条件的剩余 CFCs 消费量。

核准了 2004 年所在列显示的 7,394,943 美元和机构支助费用 599,919 美元，注意到执行委员会第四十二次会议拨款 100,000 美元和机构支助费用 7,500 美元。

## 背景

1. 执行委员会在第 37/51 号决定中批准了与印度尼西亚政府之间关于彻底逐步淘汰制冷生产行业各类氟氯化碳的协议，向多边基金申请的包括支助费用在内的费用总额为 6,964,140 美元，原则上同意由开发计划署执行。
2. 在执行委员会第三十八次会议上，开发计划署和世界银行代表印度尼西亚政府提交了两份国家氟氯化碳计划，即逐步淘汰制冷维修行业（开发计划署）和汽车空调行业（世界银行）的各类氟氯化碳。执行委员会在第 38/47 号决定中批准了与印度尼西亚政府之间关于逐步淘汰印度尼西亚制冷行业各类氟氯化碳的协议，向多边基金申请的包括支助费用在内的费用总额为 17,009,877 美元，原则上同意由开发计划署和世界银行执行。该协议载有并取代了关于逐步淘汰制冷生产行业各类氟氯化碳的以前的协议，以及首次向第三十八次会议提交的关于汽车空调和制冷维修行业逐步淘汰的新计划。
3. 如该协议所述，执行委员会和印度尼西亚政府承认拟在审议对印度尼西亚泡沫塑料和 aerosol 行业的逐步淘汰计划增加拨款之后，进一步扩大协议的范围，将彻底逐步淘汰附件 A 第一类物质在印度尼西亚的消费也包括在内。
4. 执行委员会在第 42/38 号决定中，原则上核准了印度尼西亚逐步淘汰泡沫塑料行业的各类氟氯化碳计划，包括支助费用在内的费用总额为 3,179,381 美元，由世界银行执行。委员会还核准从该费用总额中拨款 100,000 美元和支助费用来着手开展这些活动。委员会请求将行业计划载入印度尼西亚的国家氟氯化碳逐步淘汰协议。
5. 在其第四十二次会议上，执行委员会还审议了关于逐步淘汰印度尼西亚 aerosol 行业各类氟氯化碳的行业计划，但将该计划予以推迟，并且除其他外要求提交国家的氟氯化碳逐步淘汰协议草案。该协议草案应载有制冷行业的氟氯化碳逐步淘汰计划（根据第三十八次会议上批准的逐步淘汰印度尼西亚制冷行业的各类氟氯化碳协议），以及第四十二次会议原则上核准的逐步淘汰泡沫塑料行业的剩余各类氟氯化碳的项目提案，和修订后的关于逐步淘汰 aerosol 行业各类氟氯化碳的行业计划（第 42/39 号决定）。

### 向第四十四次会议提交的行业逐步淘汰计划

6. 代表印度尼西亚政府向第四十四次会议提交了以下行业计划：
  - (a) 世界银行提交的逐步淘汰 aerosol 行业各类氟氯化碳使用的修订后国家战略，总费用为 618,317 美元；
  - (b) 世界银行提交的关于 2003 和 2004 年印度尼西亚泡沫塑料和制冷行业执行活动的报告，以及 2005 年对每个行业计划的拨款请求；
  - (c) 工发组织提交的逐步淘汰溶剂行业各类氟氯化碳、四氯化碳和三氯乙酸剩余消费量的行业计划，总费用为 2,230,670 美元。

## 关于国家逐步淘汰计划的提案

7. 综上所述，共有 6 份单独拟定的行业计划（包括制冷生产和维修行业的三份计划）被提议合并为一个国家逐步淘汰计划，除三氯乙酸（16.5 ODP 吨）和四氯化碳（5.6 ODP 吨）总消费量外，该国家计划还将涉及印度尼西亚的所有各类氟氯化碳消费量。

8. 将行业计划转换为一份国家逐步淘汰计划提出了很高的文件和项目管理要求，并进行了大量的文件编制工作。其优势在于印度尼西亚将有机会在国家一级监测和核查氟氯化碳的消费及其逐步淘汰。印度尼西亚还将从国家协议固有的整体灵活性中受益。在通过执行委员会批准的个别项目和执行各个行业的行业计划来逐步淘汰消费量的情况下，只有通过国家一级的合并才能满足个别行业计划中所载的消费量限制监测和核查要求。

9. 开发计划署被指定为协调印度尼西亚国家氟氯化碳逐步淘汰计划的牵头机构。因此，开发计划署代表印度尼西亚政府向第四十四次会议提交了原则上同意的制冷和泡沫塑料行业氟氯化碳逐步淘汰计划，另外还提交了气雾剂和溶剂行业的行业计划供此次会议审议。

## 印度尼西亚的氟氯化碳消费

10. 印度尼西亚的氟氯化碳履约基准为 8,332.7 ODP 吨。印度尼西亚政府根据《蒙特利尔议定书》第 7 条提交的报告显示，2002 和 2003 年的氟氯化碳消费水平分别为 5,506.3 ODP 吨和 4,829.3 ODP 吨（减少了 677.0 ODP 吨）。

11. 关于提交给基金秘书处的印度尼西亚国家方案执行情况的 2002 年和 2003 年进度报告之间的比较表明，塑料泡沫行业（减少了 479.5 ODP 吨）、制冷生产行业（90 ODP 吨）、制冷维修行业（120 ODP 吨）和溶剂行业（7.2 ODP 吨）都实现了氟氯化碳消费量的减少。

12. 至第四十三次会议举行时，执行委员会已经批准用于印度尼西亚逐步淘汰 6,114.4 ODP 吨各类氟氯化碳的资金。截至 2003 年 12 月，逐步淘汰的各类氟氯化碳共有 3,318.8 ODP 吨，其中 2,795.6 ODP 吨与正在执行的项目有关。

## 符合资助条件的氟氯化碳剩余量

13. 截至第四十三次会议举行时，根据第 35/57 号决定通过的方法计算的印度尼西亚符合资助条件的氟氯化碳剩余量为 258.5 ODP 吨。气雾剂行业的行业计划中涉及的氟氯化碳消费量为 150 ODP 吨，溶剂行业计划涉及的氟氯化碳消费量为 78.4 ODP 吨。如果这两个项目都获得批准，则印度尼西亚符合资助条件的氟氯化碳剩余量将为 30.1 ODP 吨。印度尼西亚政府表示，打算把该剩余量用于未来的计量吸入器项目。这些数字在提交的项目中有所反映，并将被载入协议草案。

## 本文件的内容

14. 为方便执行委员会审查所提议的印度尼西亚氟氯化碳逐步淘汰国家计划中涉及的行业，本文件分成了如下六个部分：

- (a) A 部分介绍了秘书处关于气雾剂行业计划的评论；
- (b) B 部分是第四十三次会议原则上批准的泡沫塑料行业的 2005 年年度执行方案；
- (c) C 部分是 2003 和 2004 年的活动报告，以及 2005 年的制冷行业执行方案（包括生产和维修）；
- (d) D 部分是溶剂行业计划；
- (e) E 部分是秘书处关于印度尼西亚氟氯化碳逐步淘汰国家计划的评论；以及
- (f) F 部分是秘书处关于四个行业计划的建议，以及印度尼西亚政府和执行委员会达成的关于印度尼西亚氟氯化碳逐步淘汰国家计划的协议草案。

## A 部分：逐步淘汰气雾剂部门各类氟氯化碳使用的国家战略

### 项目说明

15. 逐步淘汰印度尼西亚气雾剂部门各类氟氯化碳使用的国家战略（气雾剂战略）的目标是通过政策行动、提高认识的活动、技术援助方案和转换气雾剂填充商的直接投资，至 2008 年 1 月 1 日逐步淘汰该行业的氟氯化碳消费。

#### 迄今批准的气雾剂项目

16. 执行委员会在其第十一次会议上批准了印度尼西亚的气雾剂行业技术援助方案，并向世界银行拨款 238,000 美元来执行该方案。该项目于 1997 年完成。

17. 在其第二十二次会议上，执行委员批准将 1,175,340 美元用于转换 PT Candi Swadaya Sentosa 的气雾剂填充线和在该厂建立一个填充中心这一项目，以满足 20 个小公司填充碳氢化合物气雾推进剂的需要。通过执行该项目，将有 460 ODP 吨各类氟氯化碳被逐步淘汰。由于东南亚的金融危机及其对市场的重大影响，该项目的执行被推迟。不过，如气雾剂战略所报告的那样，该项目现在已经完成，填充中心于 2004 年 10 月投入使用。

#### 气雾剂行业仍在使用的各类氟氯化碳概述

18. 根据印度尼西亚国家方案所提供的信息和执行委员会批准的投资项目，气雾杀虫剂、喷漆产品和以水为基础的气雾剂（如刮胡膏、摩丝、房间清新剂、浆粉和清洁剂）都完全转换成了不含各类氟氯化碳的技术。

19. 在气雾剂战略起草期间，对可能使用各类氟氯化碳的五个次级行业进行了调查。气雾剂行业的氟氯化碳消费估计在 550 吨左右。这一估计数字是根据气溶胶罐供应商的评论和大体上的假设得出的，因为被确定的少数几个气雾剂企业都不愿意提供有关其经营的相关信息（基准设备、安装能力和目前利用氟氯化碳推进剂进行的生产）。消费的具体情况估计如下：

- (a) 非正式行业的人体喷洒剂生产商为 400 ODP 吨，这已为核准的 PT Candi Swadaya Sentosa 项目所消费；
- (b) 正式行业的人体喷洒剂生产商为 95 ODP 吨，其中有 80 ODP 吨系由一个企业 (Yulia Kosmetik) 消费；
- (c) 工业应用消费的各类氟氯化碳为 15 至 60 ODP 吨。

20. 当地生产的药品，包括甲撑二苯基二异氰酸酯在内，由卫生部负责。在印度尼西亚，甲撑二苯基二异氰酸酯和其他喷洒药品由 P.T Astra Zeneca、P.T. Boehringer Ingelheim Indonesia、P.T. Glaxo、P.T Otsuka、P.T. Daya Varia 和 Konimex 生产。按规定允许进口甲

撑二苯基二异氰酸酯和其他气雾剂药品（第 789 和 790 号部长令）。气雾剂战略不包括药品生产和甲撑二苯基二异氰酸酯行业使用的各类氟氯化碳的逐步淘汰。在具备其他技术，并且能够以合理的成本进行转换时，印度尼西亚政府将请求多边基金协助逐步淘汰甲撑二苯基二异氰酸酯使用的约 30 吨各类氟氯化碳。在此之前，按照印度尼西亚的法规，各类氟氯化碳仍继续被视为用于必要的用途。

### 政府政策

21. 印度尼西亚政府于 1990 年出台了一项禁止在化妆品气雾剂中使用各类氟氯化碳的法令。但该国仍有大量的以氟氯化碳为基础的人体喷洒剂和化妆品在生产。该法令对气雾剂行业各类氟氯化碳的逐步淘汰几乎没有什么影响，不过“使公司转入了地下生产”。如气雾剂战略所报告，这种情况“严重阻碍了对气雾剂化妆品生产商的查找和对他们的协助”。“查找这些公司总是非常困难，有时甚至是不可能的”。

22. 印度尼西亚政府提议至 2008 年 1 月禁止各类氟氯化碳在气雾剂行业的使用。气雾剂战略中所包含的一个计划就是全面禁止氟氯化碳在气雾剂填充中的使用。

### 气雾剂战略的组成部分

23. 提交的气雾剂战略提议在气雾剂行业逐步淘汰 102.2 ODP 吨各类氟氯化碳，总费用为 618,317 美元，该战略由以下三个部分组成：

- (a) 技术援助方案（194,600 美元）：协助印度尼西亚政府解决仍在使用氟氯化碳推进剂的大量的非正式气雾剂行业。其中包括涉及消费者和气雾剂行业两个方面的提高认识的活动，重新配制气雾剂产品和在填充过程中采取安全措施，以及对已经转用不含氟氯化碳技术的气雾剂填充商进行安全培训等。开展这项活动将逐步淘汰 22.2 ODP 吨各类氟氯化碳；
- (b) 将印度尼西亚最大的气雾剂填充工厂之一，每年平均消费 80 ODP 吨各类氟氯化碳、生产 497 万件人体喷洒剂产品的 P.T Yulia（351,457 美元）从氟氯化碳转换为碳氢化合物气雾剂推进剂（目前处于追领状态，因为该公司已于 2003—2004 年转换为碳氢化合物气雾剂推进剂）。所需资金参照了气雾剂填充公司进行一般转换的标准费用，其中包括填充设备、储备罐、开放填充区、安全设备和措施、安全检查与培训（在计算增加成本时考虑了节约的 12,593 美元生产费用）；以及
- (c) 臭氧股下属的项目管理机构（48,000 美元）除其他事项外：拟定将参与技术援助方案的合格气雾剂企业的执行措施，审查和批准合格企业呈交的提案和数据，编制关于气雾剂战略执行情况的年度进展报告，以及组织三次技术研讨会。



## 秘书处的评论

### 行业消费

24. 在气雾剂战略中，气雾剂行业的氟氯化碳消费量估计在 220 ODP 吨。但该战略只涉及通过独立投资项目（80 ODP 吨）和技术援助方案（22.2 ODP 吨）消费的 102.2 ODP 吨。

25. 考虑到印度尼西亚政府拟留作合格消费的甲撑二苯基二异氰酸酯生产使用的 30.1 ODP 吨各类氟氯化碳，以及向第四十四次会议提交的提案所涉的消费量，印度尼西亚符合资助条件的剩余氟氯化碳消费量共为 47.8 ODP 吨。与秘书处进行商讨后，世界银行同意修订气雾剂战略，将气雾剂行业的氟氯化碳消费总量定为 150 ODP 吨，将未分配的符合条件的 47.8 ODP 吨消费量列入技术援助部分（投资项目：80 ODP 吨，技术援助：70 ODP 吨）。

### P.T. Yulia 的氟氯化碳转换

26. 秘书处指出，转换 P.T. Yulia 气雾剂填充线的追领资金申请（351,457 美元）过高，而且并非所有的申请项目都是递增性的。具体来说：

- (a) 基准设备是 1989 年从一家居领先地位的气雾剂设备生产商购买的。碳氢化合物用作气雾剂推进剂已有 20 多年的时间，因此由领先公司生产的气雾剂设备既能使用氟氯化碳，也能使用碳氢化合物；
- (b) 一般来说，气雾剂项目中被取代的惟一设备是推进剂填充器和推进剂泵抽卷缩机，而不是整个气雾剂填充线；
- (c) 与转换有关的生产费用节约估计为 0.002 美元/罐，或大约 100,000 美元/年。但考虑到在该厂填充的罐大小不一，这里可以适用 0.4 的因数；
- (d) 执行委员会批准的规模相似的气雾剂项目的成本有效价值从 2.17 美元/公斤到 3.35 美元/公斤不等。

27. 鉴于以上原因，秘书处估计该项目符合条件的增加成本为 224,000 美元，其中执行机构的费用占项目总费用的 6%（关于追领资金中机构费用的第 29/72 号决定）。

28. 世界银行按照秘书处的评论和建议修订了气雾剂战略。该项目的商定费用总额为 595,910 美元（3.97 美元/公斤），具体如下：

- (a) P.T Yulia 厂从氟氯化碳转向碳氢化合物气雾剂推进剂的修订后费用为 224,000 美元（由开发计划署执行）；
- (b) 技术援助方案的修订后费用为 317,910 美元，逐步淘汰 70 ODP 吨氟氯化碳（由世界银行执行）；以及

(c) 臭氧股下属的项目管理机构费用为 54,000 美元（由世界银行执行）。

29. 符合资助条件的剩余的 30.1 ODP 吨氟氯化碳 用于药物气雾剂应用行业，其中包括甲撑二苯基二异氰酸酯。印度尼西亚政府可以在执行委员会今后举行的会议上提交逐步淘汰该氟氯化碳消费量的申请。

## B 部分：泡沫塑料行业各类氟氯化碳的逐步淘汰：2005 年年度执行方案

### 项目说明

30. 开发计划署作为牵头机构，代表印度尼西亚政府提交了第四十二次会议原则上批准的泡沫塑料行业剩余各类氟氯化碳的逐步淘汰行业计划的 2005 年工作方案，供执行委员会审议。在第四十二次会议上，执行委员会批款 100,000 美元，由世界银行开展执行该行业计划所必需的活动。这笔金额从原则上为该计划批准的金额中扣除，并记入最终淘汰氟氯化碳协议的资金支付时间表。

31. 原则上批准的资金总额的细目情况、提议的支付时间表和泡沫塑料行业的氟氯化碳消费量及逐步淘汰控制目标如下：

参数	2004	2005	2006	2007	2008	总计
泡沫塑料行业计划中的年度氟氯化碳逐步淘汰目标 (ODP 吨)	0	129.8	155.7	66.5	0	352.0
项目费用 (美元)	1,725,000*	1,050,000	147,564	35,000	0	2,957,564
支助费用 (美元)	129,375	78,750	11,067	2,625		221,817
总费用 (美元)	1,854,375	1,128,750	158,631	37,625		3,179,381

\*在第四十二次会议上发放了第一批资金 100,000 美元。

32. 世界银行用第四十二次会议上批准的资金开始了执行活动。环境部和作为小组协调人和受益人代表的一家当地公司 Dasa Windu Agung (DWA) 签署了泡沫塑料次级行业的分许可协议之后，对投资计划的管理即告开始。拟定了关于投资活动和小组协调人工作范围的工作计划。行业计划管理和协调股负责协调政策和管理活动。关于非投资部分（公众认识和技术援助），由环境部请三个合格公司表述意向，并在 2004 年 10 月底同选定的公司签署独立的分许可协议。

### 2005 年度执行方案

33. 2005 年年度执行方案的泡沫塑料部分详细介绍了 2005 年计划实施的投资和非投资活动。世界银行计划转换 20 个生产硬质聚氨酯、总消费量为 215.1 ODP 吨的企业，2005 年泡沫塑料行业部分预计将减少 129.8 ODP 吨。

34. 泡沫塑料行业计划的 2005 年年度执行方案目标是确保至 2005 年年底，实现逐步淘汰 130 ODP 吨氟氯化碳-11 的国家目标。泡沫塑料行业的行业行动重点是对硬泡沫塑料次级行业的企业进行确认调查，以核实基准信息，评估当前状况和确认选定的转换技术。接下来的步骤是采购和随后的交付、安装、试车和试用。逐步淘汰 130 ODP 吨的第一份年度方案的所有合同都将在 2004 年签署。迄今为止，世界银行共确定了逐步淘汰的总消费量为 215 ODP 吨的 20 个企业，其中有 15 个企业将在 2005 年进行转换。

35. 将拟定提高认识的方案，让用户了解逐步淘汰工业泡沫塑料行业氟氯化碳的必要性、泡沫塑料行业计划和国家的承诺。方案的目标是鼓励宣传用成本低、技术适当的替代物来取代氟氯化碳-11 发泡剂。

36. 将举办一系列的讲习班来发展 CFC-11 PU 泡沫塑料行业的政策工具。目标是让有关对象了解泡沫塑料行业的逐步淘汰方案和政府遵守一定的整体和年度淘汰目标的义务。这将通过与设备供应商和化工产品供应商进行会晤和讨论，从而对使用氟氯化碳发泡剂的当前应用技术和选择替代物的标准进行评估来实现。

37. 小组协调人将开展若干管理活动来处理泡沫塑料行业逐步淘汰计划规定的日常活动，如成立一个小组，对人员进行培训，提高其认识，进行项目管理和建立一个网站等。

38. 还将开展监测活动，包括雇用当地顾问来对方案中包含的参与企业进行评估。这些活动还将包括检测设备的实现、预安装和试运转以及开展关于印度尼西亚泡沫塑料行业的研究。

#### 秘书处的评论

39. 秘书处注意到世界银行制定了一套年度报告标准。年度工作方案将包括以下部分：

- (a) 行业逐步淘汰时间表；
- (b) 上一年（前几年）所有活动的开展情况和本年度商定的补救措施；
- (c) 下一年度方案的目标，逐步淘汰目标和下一年活动的资金要求；
- (d) 说明下一年的活动，如企业一级的活动，将要实施的政策和技术援助活动；以及
- (e) 年度方案的执行情况指标。

40. 虽然 2005 年的年度工作方案没有达到世界银行在项目提案中建议的详细程度，但它为批准第一期年度拨款的剩余部分提供了一个基础。秘书处还注意到，世界银行提交的年度执行计划的内容为评估进度情况提供了一个完整的基础，今后应当予以贯彻。

## C 部分：制冷行业各类氟氯化碳的逐步淘汰：2003 年的执行情况报告和 2005 年年度执行方案

### 项目说明

41. 开发计划署作为牵头机构，代表印度尼西亚政府提交了 2004 年的年度进度报告供执行委员会审议，该报告载有逐步淘汰印度尼西亚制冷行业，包括商业制冷生产、制冷维修和汽车空调维修次级行业的消耗臭氧层物质的制冷行业计划。除该报告之外，开发计划署还提交了这些项目的 2005 年执行方案。

42. 执行委员会在其第三十八次会议上批准了一项完全淘汰印度尼西亚制冷行业的氟氯化碳的协议，资金数额为 15,627,300 美元。批准的资金支付总时间表和年度氟氯化碳消费量及该协议的逐步淘汰控制目标转载如下：

参数	2002	2003	2004	2005	2006	2007	2008	总计
制冷行业的年度 CFC 消费限额 (ODP 吨)	NA	3,218	3,018	2,408	1,698	966	0	N/A
制冷生产次级行业的年度 CFC 逐步淘汰目标 (ODP 吨)	0	90*	300	300	300	241	0	1,231
制冷维修次级行业的年度 CFC 逐步淘汰目标 (ODP 吨)	0	0	200	300	322	250	0	1,072
MAC 次级行业的年度氟氯化碳逐步淘汰目标 (ODP 吨)	0	220	110	110	110	365	0	915
制冷行业的年度 CFC 逐步淘汰目标 (ODP 吨)	0	310	610	710	732	856	0	3,218
开发计划署 (制冷生产)	1,288,000	2,200,000 **	1,762,000	750,000	217,000	181,000	0	6,398,000
支助费用	111,920	194,000	156,900	67,500	19,530	16,290		566,140
开发计划署 (制冷维修)	2,196,758	1,805,987	500,000	250,000	159,555	0	0	4,912,300
支助费用	195,708	160,939	43,400	21,300	13,160	0	0	434,507
世界银行(MAC)	1,369,800	1,347,300	1,347,300	126,800	125,800	0	0	4,317,000
支助费用	121,962	119,937	119,937	10,092	10,002	0	0	381,930

\* 通过现有项目。

\*\* 2003 年 7 月从第二期的 2,200,000 美元中为开发计划署的制冷生产行业逐步淘汰计划拨出了 600,000 美元预付款。

43. 监督报告载有 2003 年 7 月以来商业制冷生产次级行业以及 2002 年 12 月以来制冷维修和汽车空调维修次级行业的进度概述。此外还载有迄今为止根据 2004 年的制冷行业执行计划开展的活动以及 2004 年在泡沫塑料行业开展的初级活动概要。该提案还载入了这三个制冷次级行业的 2005 年年度执行方案，及其各自的资金拨款申请。

### 制冷生产次级行业—开发计划署

44. 2003 年完成了六个单独实施的项目中的氟氯化碳淘汰活动，根据商定的 2003 年该行业逐步淘汰目标，共淘汰 90 ODP 吨氟氯化碳。

45. 关于 2004 年的行动，2003 年就开始了准备工作，当年 9 月已完成了设备采购。安装、试运转和培训正在各项目工地进行。截至 2004 年 8 月，13 个企业的活动已告完成。预计其余企业的活动将于 2004 年底完成。开发计划署指出，在此基础上，2004 年逐步淘汰 300 ODP 吨的目标也将实现或者超过。第一组参与企业购买设备花了大约 160 万美元。

46. 印度尼西亚政府 2004 年 1 月批准了第二批 34 个企业，由开发计划署执行。至 2004 年 6 月，已经发出了第二批企业的设备购买订单。这些企业的氟氯化碳总消费量约为 231 ODP 吨。

#### 制冷维修次级行业——开发计划署

47. 开发计划署于 2002 年 12 月收到了用于执行回收/再循环和改型/替代试验示范方案以及开展培训活动的第一次拨款 2,196,758 美元。回收/再循环方案的目标是在 2003 年间确定约 385 个维修单位。政府确定和批准的大型维修单位约为 188 个。此外还确定了提供回收/再循环示范设备的 134 个培训单位。为第一批维修和培训参与单位采购回收/再循环设备的工作于 2004 年完成。目前正在分配设备。

48. 改型/替代试验示范方案的执行是从初步筛选潜在的受益人开始的。共确定了 68 个实体（超市、旅馆、医院、餐馆、海上和工业设施）。为上述实体参与项目建立机制和安排向这些终端用户提供协助的工作正处于最后阶段。为这些终端用户开展的改型/替代示范活动预计将在 2004 年底和 2005 年中期完成，这些活动反过来又会加速整个终端用户行业的改型/替代活动，使 2004 年期间用于维修的氟氯化碳约减少 40 ODP 吨。

49. 2003 年实施了主要培训人员方案。在四个主要城市举办了培训课程，2003 年 11 月和 12 月期间共有 91 个参与者接受了培训。主要培训人员方案目前正在实施，以实现在 2004 年培训 150 名主要培训者的目标。此外还在准备执行技术人员培训方案。2004 年 8 月与有关政府部门和工业协会的代表举行了会议，以推动国家制冷技术人员能力标准的制订。预计此次会议的结果是加速在 2005 年通过培训标准。

#### 汽车空调次级行业

50. 该项目的主要目标是通过提供制冷剂回收和再循环设备及培训，提高汽车空调修配所在汽车空调维修操作方面应用良好做法的能力。预计至 2003 年底，该项目将逐步淘汰 220 ODP 吨氟氯化碳-12。2003 年经核查并同意参与方案的所有汽车空调修配 216 个。这 216 个企业的消费总量为 254.5 ODP 吨，超过了 2003 年逐步淘汰 220 ODP 吨的目标。只有在设备操作员具备必要的技能和知识、能够正确使用该设备的情况下，汽车空调回收和再循环设备的分配才会有益，从而减少废气的排放量。

51. 汽车空调行业计划中所载的培训培训者的活动，其目的在于设立一个对汽车空调技术人员进行培训的培训者人才库。该项活动包括与准备阶段确定的培训机构一起编制课程，招聘教师和确定受训人员。这一过程目前正在实施。2004 年在雅加达举办了四次汽车空调维修人员讲习班，在万隆和苏腊巴亚各举行了一次。在收到再循环机器以前，共有 235 名修配厂的厂主或其代表参加这些讲习班。每个修配厂厂主都写下了承诺书。

52. 20 个培训中心的培训培训者讲习班于 2004 年 9 月结束。培训者在成功完成培训并通过证书考试后将被授予合格证书。到 10 月初, 选定的培训者将在选定的培训中心对企业进行培训。技术员培训预计在 2004 年第四季度进行。共有 300 名技术人员报名参加培训。

#### 认识、政策和管理方案

53. 2003 至 2004 年, 对公众、制冷单位所有人和维修技术员展开了提高认识的活动。

54. 环境部继续同有关政府部门和有关利益方采取措施, 修改关于氟氯化碳进口的现有规定(建立了一个现实的许可/定额制度, 出台了注册/报告氟氯化碳使用的新规定)。

#### 审计和核查

55. 根据协议规定, 开发计划署于 2004 年 9 月底委托一个独立的国家实体进行了效绩核查, 以确定是否实现了双方商定的 2003 年氟氯化碳逐步淘汰目标和消费限制。效绩核查将根据指定进口商提供的数据和有关各部及海关提供的证据来核实 2003 年国家一级制冷行业的氟氯化碳消费水平。此外, 还将通过参观已完成项目的若干工厂和检查这些项目的有关记录来核实制冷生产次级行业和汽车空调次级行业的氟氯化碳逐步淘汰情况。

#### 秘书处的评论

56. 秘书处分析了 2003 至 2004 年进度报告中所载的与协议中规定的 2003 年氟氯化碳逐步淘汰目标, 即制冷生产行业逐步淘汰 90 ODP 吨, 汽车空调次级行业逐步淘汰 220 ODP 吨有关的完成活动信息, 据报告, 这些目标已经实现。2003 年在制冷维修行业没有逐步淘汰目标。

#### 制冷生产

57. 秘书处收到的项目完成报告证实了制冷生产的逐步淘汰。

#### 汽车空调的制冷维修

58. 根据汽车空调次级行业计划, 只有在操作员经过培训之后, 才能将汽车空调回收和再循环设备分配到受益企业, 从而减少废气排放量。根据进度报告, 培训培训者方案的第一阶段已于 2004 年完成。对技术员的培训于 2004 年第四季度开始。但世界银行澄清说, 在举办培训课程以前就将 110 台回收和再循环分配到了汽车空调修配所。因此, 报告说汽车空调次级行业减少了 220 ODP 吨, 可能是由于外部因素所致, 如用配备 HFC-134a 系统的新车辆取代使用以 CFC-12 为基础的汽车空调系统的旧车辆, 因为行业计划中提到的有助于逐步淘汰的条件似乎并未完全实现。所报告的 2004 年制冷生产和维修次级行业的氟氯化碳消费减少情况应当在 2005 年予以核实, 并载入 2005 年的进度报告。

#### 制冷维修

59. 秘书处提请开发计划署注意执行委员会最近提出的关于执行回收和再循环方案的建议，以及近来达成的协议中所用的相关语言：“制冷维修行业的回收和再循环方案将分阶段实施，以便在拟议结果没有实现时将资源投向其他活动，如增加培训或购买维修工具，并对其进行密切的监督。” 秘书处建议开发计划署应努力确保在 2005 年的年度执行计划中反映这些建议。开发计划署解释说，鉴于从其他回收和再循环方案中吸取的教训，开发计划署正与印度尼西亚政府一道探索建立现实的指定进口商进口限额这一制度的方法，以各类氟氯化碳 的供应进行监督和控制。这会导致各类氟氯化碳的进口价格攀升，从而使回收和再循环的各类氟氯化碳具有较大的吸引力。将通过建立中央集权、商业化操作的再循环设施来实现市场驱动方法。这将确保回收和再循环的各类氟氯化碳在成本上具有竞争能力。

### 与核查有关的问题

60. 关于核查，秘书处向开发计划署指出，协议中关于制冷行业计划的执行方法规定，应由开发计划署进行年度独立审计，以核实氟氯化碳的消费水平，包括现场检查和随机访问。政策和管理支助部分也包括建立和启动一个分权机制，与省级环境管理机构一道对计划成果进行监督和评估，以确保可持续性。

61. 开发计划署的进度报告表明，于 2004 年 9 月底同一个独立的审计员订立了分包合同，由其通过审计生产和进出口数据，对制冷行业的国家一级消费进行核查。还应在企业一级对现有项目进行核查，以确定它们的基准消费水平，并查明 2003 年是否真的实现了逐步淘汰。审计员还会核查是否开展了《2003 年度方案》中规定的活动。

62. 开发计划署表明有望在执行委员会第四十四次会议之前提交绩效核查报告，并编制补充报告供秘书处和执行委员会审查。但截至编写本评估文件时止，上述两份报告均未提交秘书处以供审查。



## D 部分：在印度尼西亚的溶剂行业最终逐步淘汰 CFC-113、四氯化碳和三氯乙酸的计划

### 项目说明

63. 印度尼西亚政府提交了一份最终逐步淘汰溶剂行业的消耗臭氧层物质的计划，供执行委员会在第四十三次会议上审议。该项目的执行将逐步淘汰 78.4 ODP 吨 CFC-113、16.5 ODP 吨四氯化碳和 5.6 ODP 吨三氯乙酸，这也是这些物质在印度尼西亚的剩余消费量。所需要的资金为 2,230,670 美元。

#### CFC-113、四氯化碳和三氯乙酸消费量

64. 下表列示了 1999 至 2003 年间印度尼西亚的氟氯化碳-113、四氯化碳和三氯乙酸消费量。四氯化碳的基准消费量为 0 ODP 吨，三氯乙酸的基准消费量则为 13.3 ODP 吨。

ODP 吨	1999	2000	2001	2002	2003
CFC-113 <sup>1</sup>	-	-	-	66	78.4
CTC <sup>2</sup>	0	0	0	16.5	16.5
TCA <sup>2</sup>	20	-	20	8.8	10.7

注 1. 来自国家方案执行情况报告的数据。  
2. 根据第 7 条报告的数据。

65. 臭氧股和工发组织与印度尼西亚的有关各部、进口商和确定的消耗臭氧层物质溶剂用户密切合作，共同确定本行业的消耗臭氧层物质剩余消费量。向所有潜在的消耗臭氧层物质用户发放了调查问卷；当地顾问和一名工发组织代表访问了选定的用户。

66. 为编制项目提案而进行的调查结果显示：

- (a) 有一个企业(Pt. Apeka Industrial Servindo)将四氯化碳用于配制电器和金属器具清洁混合剂；
- (b) 确定的七个三氯乙酸用户的消费总量为 23.24 ODP 吨。但经发现，有一个企业（消费总量为 12.5 ODP 吨的 Pt. Agung Kimia Jaya Mandiri）不符合资助条件，另两个企业的部分消费量于 2001 年进行了转换。因此，其余未解决的三氯乙酸消费量为 5.6 ODP 吨：

公司	ODP 吨/年	用途
Pt. Garuda, Aero Asia (*)	3.22	干洗（纺织品）
Pt. Merpati Nusantara Airline(*)	1.90	清洗金属
Astra Group (9 companies)	1.92	清洗金属（汽车零件）
Pt. Solindah Kita	0.90	鞋底
Pt. Accurai Jakarta	1.30	鞋底
Pt. Apeka Industrial Servindo	1.50	清洁剂

公司	ODP 吨/年	用途
Pt. Agung Kimia Jaya Mandiri(**)	12.50	清洁剂

(\*) 追领项目。

(\*\*) 不符合资助条件。

(c) 确定的五个氟氯化碳-113 用户的消费总量为 78.4 ODP 吨：

公司	ODP 吨/年	用途
Astra 集团(9 个公司)	12.17	清洗金属 (汽车零件)
Pt. Solindah Kita	21.82	鞋底
Pt. Accurai Jakarta	22.54	鞋底
Pt. Tras Rantai Mas	13.84	鞋底
Pt. Apeka Industrial Servindo	8.00	清洁剂

67. 随后可能确定的其他小溶剂用户将只能通过接受技术援助（即讲习班）来逐步淘汰消耗臭氧层物质溶剂消费量。

#### 拟议的逐步淘汰战略

68. 溶剂行业的逐步淘汰计划将使印度尼西亚在 2006 年 1 月 1 日前逐步淘汰剩余的消耗臭氧层物质溶剂（三氯乙酸、四氯化碳和氟氯化碳-113）消费量。建议开展投资、非投资和技术援助及能力建设活动来实现这一目标。

69. 在工厂一级，该计划的投资部分除其他外将包括：转换的技术要求评估；国际和当地的设备采购范围；编写技术说明书和采购工作范围；场地准备；结关和交付；安装和调试；试验、培训和工厂试运行；以及销毁基准设备。

70. 行业计划还包括一个技术支助部分，以确保逐步淘汰消耗臭氧层物质的活动在技术上是可行的和可持续的。开展这些活动的预期结果如下：制定行业内部不含消耗臭氧层物质的产品和应用程序的质量和性能标准；通过技术讲习班和会议与用户合作，为不含消耗臭氧层物质的应用程序的可持续性提供技术援助；以及举办生产操作员和技术员培训课程，支持不含消耗臭氧层物质的技术。

71. 实施逐步淘汰计划需要与印度尼西亚政府开展的各种政策、管理、财政、提高认识和能力建设活动密切协调，以确保其实施符合政府的优先考虑顺序。溶剂行业计划由政策和管理支助委员会管理和协调，由政府指定一名协调员参加该委员会，并由工发组织代表和专家提供支持，除其他外其中包括：

- (a) 制订一个关于立法和管理行动的政策发展和实施方案，确保整个行业履行逐步淘汰义务；
- (b) 为政府各部、立法人员、决策者和其他机构有关利益方制订和执行培训方案，以及开展提高认识和能力建设活动；
- (c) 起草年度执行计划，包括确定企业参与计划次级项目的顺序，以及通过参观工厂

和绩效审计来核查和证实已完成的次级项目中消耗臭氧层物质的逐步淘汰情况；

(d) 为以绩效为基础的年度支付报告计划的执行进度。

### 项目费用

72. 提交的该项目的总费用为 2,230,670 美元（21.12 美元/公斤）。项目费用是按照三种消耗臭氧层物质溶剂的消费量来计算的，使用的成本有效值为：四氯化碳，10 美元/公斤；三氯乙酸，36 美元/公斤；CFC-113，19 美元/公斤。

说明	费用 ( 美元 )
资本成本	2,040,670
政策和管理支助部分	135,000
技术部分	55,000
<b>总计</b>	<b>2,230,670</b>

### 项目执行结构

73. 逐步淘汰计划由工发组织在印度尼西亚政府的协助下进行全面管理。臭氧股负责监督逐步淘汰计划的全面执行，颁布和实施政策与立法，以及协助工发组织编制提交给执行委员会的年度执行计划和进度报告。

### 秘书处的评论

#### 消耗臭氧层物质消费量

74. 秘书处注意到消耗臭氧层物质消费数据是次级行业的平均消费水平，而不是企业一级的实际消费量。此外，该项目提议逐步淘汰 16.5 ODP 吨四氯化碳，但在 1998 至 2001 年间，印度尼西亚政府根据第 7 条向臭氧秘书处报告的四氯化碳消费量为零，四氯化碳的基准消费量也是零。

75. 随后，工发组织报告说，应印度尼西亚环境部于 2002 年 3 月提出的正式要求，工发组织对该国的消耗臭氧层物质溶剂使用进行了全国性的调查。为了确定所有溶剂用户，工发组织和印度尼西亚政府与溶剂销售商、用户及其代表举行了工作会议。对生产工艺和消费水平进行了核查，并讨论了其他方案。在提交项目前，印度尼西亚政府还独自参观了被确定的公司，再次核实了消费数字。工发组织认为，项目提案中的消耗臭氧层物质消费量已经在企业一级进行了充分的核查。

76. 关于四氯化碳消费量，工发组织向秘书处通报说，由于 1997 年开始的经济和金融危机，各类消耗臭氧层物质的进口已经中断。惟一的一家各种清洗剂生产商仍然使用的四氯化碳数量列入了这一时期的储存量，并在 2002 和 2003 年度进行了准确的报告。

77. 关于三氯乙酸消费量，工发组织解释说，确定的合格用户的消费量（5.6 ODP 吨）与根据第 7 条报告的数据（10.7 ODP 吨）之间存在差异是因为有一个企业不符合资助条件。

### 基准设备和替换技术

78. 秘书处注意到，在企业一级，关于基准设备和消耗臭氧层物质溶剂在当前清洁工艺中的使用方式的信息非常有限。因此，无法充分评估所要求的资金是否符合条件。另外，替换技术部分只概述了当前市场上提供的技术，而没有说明针对印度尼西亚的特定情况选择了哪些方案。

79. 工发组织报告说，对将要接受资金的所有企业都进行了参观。其中有许多用的是现代清洁和混和技术，其设备可以安全地处理 CFC-113、三氯乙酸和 四氯化碳。特别是占项目费用 50% 以上的三个鞋底制造企业目前正在使用顶端开口并且有离地间隙的现代去污机来清洗其产品。建议用全氯乙烯来替代这些企业目前使用的 CFC-113 和三氯乙酸。

80. 工发组织指出，对现有的去污罐进行翻新是不可行的。基准设备的转换、新组件的交付及其安装和试运转费用超过了新标准设备的采购和试运转费用。工发组织随后提交了关于基准设备和提议的替代设备的详细信息。经议定，这三个企业的增加成本是 800,000 美元，与此等项目的全球平均水平相比，其成本效益为 13.26 美元/公斤。

81. 秘书处对使用为金属和电器清洗确定的成本有效界限来计算从事配制和混合溶剂清洁液的企业增加成本表示疑问。工发组织解释说，这些企业需要在今后使用易燃溶剂。这就需要提供能够在有易燃液体的情况下安全运转的设备。秘书处和工发组织最后就某种方法达成了一致，这种方法既考虑这些企业逐步淘汰的三种消耗臭氧层物质溶剂的总数量，同时也考虑以前为类似企业，包括第四十三次会议批准的尼日利亚溶剂行业计划（由工发组织提交）中的企业提供的增加成本。这一部分的增加成本为 300,000 美元，成本效益为 9.9 美元/公斤。

### 追领资金

82. 秘书处还指出，追领资金的提案应当提供关于每个企业的基准条件、替代技术和安装设备以及转换时间期限的全面评估，从而为可能符合条件的任何增加成本奠定基础。

83. 工发组织提供了要求追领资金和申请替代设备费用的两个企业所使用的基准设备的详细情况，并有相关文件作为补充。可以确定设备的增加成本是否符合条件。双方一致认为，其他费用（包括经营费用在内），是不易核实的，也不能提出申请。追领部分的增加成本是 60,733 美元。

### 技术支持和管理

84. 项目提案还包括总费用为 120,000 美元的技术支持方案和管理部分。这占与基金秘书处商定的最终投资费用的 10%，同为最终项目和行业及国家逐步淘汰计划批准的类似请求相一致。项目的总增加成本为 1,464,733 美元。工发组织请求在第四十四次会议上一次性地

批准这笔款项。

## E 部分：印度尼西亚的国家氟氯化碳逐步淘汰计划协议草案

### 说明

85. 开发计划署代表印度尼西亚政府提交的国家氟氯化碳逐步淘汰计划协议草案载有并取代业已批准的制冷行业计划，载有原则上批准的泡沫行业计划，以及新提交的气雾剂和溶剂行业的行业计划。该协议草案采用了执行委员会规定的格式。

### 秘书处的评论

86. 如果该协议获得批准，它将包括和取代现行的制冷行业协议。相应地，原则核查要求也将成为国家一级的氟氯化碳消费量，并且，按照某项报告要求，该消费量将包括气雾剂、泡沫塑料、制冷和溶剂行业在内。该协议没有规定各个行业的最高消费水平。因此核查要求变得更加直接，更加现实，因为它将以印度尼西亚确定的氟氯化碳净进口额为基础。

87. 根据该协议草案，报告将继续由行业一级的相关机构提交，并由开发计划署整理成一份报告后提交执行委员会。同样，年度执行计划也将在行业一级编制，由开发计划署整理。

88. 如本文件 A 部分所示，印度尼西亚拟将其符合条件的 30.1 ODP 吨氟氯化碳剩余消费量分配给医疗气雾剂行业（甲撑二苯基二异氰酸酯）。秘书处正与开发计划署商讨在今后可能提交制药气雾剂项目的基础上将该协议纳入该行业的逐步淘汰计划。

89. 基金秘书处正与开发计划署讨论若干其他细节，包括在协议草案中纳入资金水平和为气雾剂行业和溶剂行业商定的逐步淘汰，以及根据溶剂行业计划实现的三氯乙酸和四氯化碳剩余消费量的逐步淘汰。将根据第 41/80 号决定的要求提交更多建议和协议定稿供执行委员会审议。

## F 部分：秘书处的建议

90. 本部分综合介绍了秘书处对国家氟氯化碳逐步淘汰计划的各个组成部分和协议草案进行审查后提出的建议。制冷行业有一个问题同 2003 年消费量的核查和逐步淘汰情况有关，可能会影响到执行委员会对批准 2005 年年度执行方案资金的审议。

91. 因此，在气雾剂、泡沫塑料和溶剂行业方面，谨提议执行委员会：

- (a) 向作为印度尼西亚逐步淘汰氟氯化碳国家计划一部分的逐步淘汰各类氟氯化碳在印度尼西亚气雾剂行业使用的国家战略批准资金，其总费用为 595,910 美元，另加拨给开发计划署和世界银行的机构支助费用，具体如下：
  - (一) 将 224,000 美元和拨给开发计划署的 13,440 美元机构支助费用，用于将 P.T Yulia 的氟氯化碳转换为碳氢化合物气雾剂推进剂（追领费用）；以及
  - (二) 将 371,910 美元和拨给世界银行的机构支助费用 27,893 美元，用于执行技术援助方案和臭氧股下属的项目管理机构；
- (b) 注意到除目前用于包括计量吸入器在内的制药气雾剂应用技术的 30.1 ODP 吨各类氟氯化碳外，多边基金不会再为逐步淘汰气雾剂行业的氟氯化碳拨款。印度尼西亚政府可在执行委员会的将来会议上申请逐步淘汰该氟氯化碳消费量；
- (c) 批准 1,625,000 美元余额和 121,875 美元支助费用，作为泡沫塑料行业逐步淘汰计划的 2004 年期拨款；
- (d) 请世界银行在提交关于国家逐步淘汰计划的泡沫塑料行业部分年度报告时采用泡沫塑料行业项目文件中提议的格式；
- (e) 批准 1,464,733 美元和支助费用 108,974 美元，用于工发组织执行溶剂行业的逐步淘汰最后项目，以此作为印度尼西亚逐步淘汰氟氯化碳国家计划的一部分。

92. 关于制冷行业，谨提请执行委员会根据秘书处在本文件 C 部分第 60 至 62 段提供的关于核查的信息和评论，以及开发计划署将在执行委员会第四十四次会议之前提交的绩效核查补充报告审议批准 2005 年工作计划和批款申请。

93. 谨提请执行委员会还根据第 41/80 号决定，批准将在委员会第四十四次会议之前提交的印度尼西亚政府和执行委员会关于印度尼西亚逐步淘汰氟氯化碳国家计划的协议草案，该协议草案包括了气雾剂、泡沫塑料、制冷和溶剂行业的所有氟氯化碳消费量。

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**INDONESIA**  
**PHASE-OUT OF CFCs IN THE FOAM AND REFRIGERATION SECTORS**

**REPORT ON 2003 IMPLEMENTATION,  
2005 ANNUAL IMPLEMENTATION PROGRAMME AND  
REQUEST FOR RELEASE OF THE THIRD FUNDING TRANCHE**

**Prepared Jointly By:**

**SECTOR PHASE-OUT PLAN MANAGEMENT & COORDINATION UNIT (SPMCU),  
KEMENTERIAN LINGKUNGAN HIDUP (KLH)  
UNDP  
WORLD BANK**

**MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE  
MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER  
PROJECT COVER SHEET - MULTI-YEAR PROJECTS**

COUNTRY INDONESIA

<b>PROJECT TITLE</b>	<b>BILATERAL/IMPLEMENTING AGENCY</b>
Phase-out of CFCs in the Refrigeration Sector in Indonesia	UNDP – Lead Implementing Agency World Bank – Cooperating Agency
<b>SUB-PROJECT TITLE (S)</b>	
Phase-out in Refrigeration Manufacturing Sector Phase-out Management in the Refrigeration Servicing Sector Phase-out in the MAC Sector Phase-out in the Foam Sector	UNDP UNDP World Bank World Bank

NATIONAL COORDINATING AGENCY

Kementrian Lingkungan Hidup (KLH)

**LATEST REPORTED CONSUMPTION DATA FOR ODS ADDRESSED IN THE PROJECT**

**A. Article-7 Data (ODP Tonnes, 2003, as of May 2004)**

Annex-A Group-I Substances (CFCs) ODP Tonnes	4,829.33	Annex-B Group-III Substances (TCA) ODP Tonnes	10.74
Annex-B Group-II Substances (CTC) ODP Tonnes	16.50	Annex-E Group-I Substances (MeBr) ODP Tonnes	37.80

**B. Country Programme Sectoral Data (ODP Tonnes for 2003, as of May 2004)**

Substance	Aerosols	Foams	Refrigeration	Substance	Solvents	Process Agent	Fumigant
CFC-11	2.10	791.34	663.5	CTC	16.50	N/A	N/A
CFC-12	764.20	-	2,506.99	TCA	10.74	N/A	N/A
CFC-115	-	-	38.00	MeBr	N/A	N/A	37.80

<b>CFC CONSUMPTION REMAINING ELIGIBLE FOR FUNDING (ODP Tonnes)</b>	<b>258.5</b>
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**CURRENT YEAR BUSINESS PLAN: Funding level US\$ million, Total Phase-out ODP Tonnes**

PROJECT DATA (ODP tonnes)	2002	2003	2004	2005	2006	2007	2008	Total	
Annual CFC Consumption Limit in the Refrigeration Sector (ODP tonnes)	NA	3,218	3,018	2,408	1,698	966	0	N/A	
Annual CFC phase-out target in the <b>Refrigeration Manufacturing Sub-Sector</b> (ODP tonnes)	0	90*	300	300	300	241	0	1,231	
Annual CFC phase-out target in the <b>Refrigeration Servicing Sub-sector</b> (ODP tonnes)	0	0	200	300	322	250	0	1,072	
Annual CFC phase-out target in the <b>MAC Sub-sector</b> (ODP tonnes)	0	220	110	110	110	365	0	915	
<b>Annual CFC phase-out target in the Refrigeration Sector</b>	<b>0</b>	<b>310</b>	<b>610</b>	<b>710</b>	<b>732</b>	<b>856</b>	<b>0</b>	<b>3,218</b>	
<b>Annual CFC phase-out target in the Foam Sector plan</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>129.8</b>	<b>155.7</b>	<b>66.5</b>	<b>0</b>	<b>352</b>	
<b>Annual Funding Instalments (US\$)</b>	<b>UNDP (Refrigeration Manufacturing)</b>	<b>1,288,000</b>	<b>2,200,000</b>	<b>1,762,000</b>	<b>750,000</b>	<b>217,000</b>	<b>181,000</b>	<b>0</b>	<b>6,398,000</b>
	Support Cost	111,920	194,000	156,900	67,500	19,530	16,290		566,140
	<b>UNDP (Refrigeration Servicing)</b>	<b>2,196,758</b>	<b>1,805,987</b>	<b>500,000</b>	<b>250,000</b>	<b>159,555</b>	<b>0</b>	<b>0</b>	<b>4,912,300</b>
	Support Cost	195,708	160,939	43,400	21,300	13,160	0	0	434,507
	<b>World Bank (MAC)</b>	<b>1,369,800</b>	<b>1,347,300</b>	<b>1,347,300</b>	<b>126,800</b>	<b>125,800</b>	<b>0</b>	<b>0</b>	<b>4,317,000</b>
	Support Cost	121,962	119,937	119,937	10,092	10,002	0	0	381,930
	<b>World Bank (Foam)</b>	<b>0</b>	<b>0</b>	<b>1,725,000</b>	<b>1,050,000</b>	<b>147,564</b>	<b>35,000</b>	<b>0</b>	<b>2,957,564</b>
Support Cost			129,375	78,750	11,067	2,625		221,817	
<b>Total Annual Funding Instalments (US\$)</b>	<b>4,854,558</b>	<b>5,353,287</b>	<b>5,334,300</b>	<b>2,176,800</b>	<b>649,919</b>	<b>216,000</b>	<b>0</b>	<b>18,584,864</b>	
Total Support Costs (US\$)	429,590	474,876	449,612	177,642	53,759	18,915	0	1,604,394	
<b>Total Costs to Multilateral Fund</b>	<b>5,284,148</b>	<b>5,828,163</b>	<b>5,783,912</b>	<b>2,354,442</b>	<b>703,678</b>	<b>234,915</b>	<b>0</b>	<b>20,189,258</b>	

**FUNDING REQUEST**

Approval of funding for the third tranche (2004) of US\$ 1,762,000 plus support costs of US\$ 156,900 for the Refrigeration Manufacturing Sector (UNDP), US\$ 500,000 plus support costs of US\$ 43,400 for the Refrigeration Servicing Sector (UNDP), US\$ 1,347,300 plus support costs of US\$ 119,937 for the MAC Sector (World Bank), and \$1,625,000 for the Foam Sector Plan (after initial release of \$100,000 at 42<sup>nd</sup> ExCom), as indicated above.

Prepared by: UNDP in consultation with KLH and the World Bank

Date: Revised 29 October 2004

**INDONESIA**  
**PHASE-OUT OF CFCs IN THE FOAM AND REFRIGERATION SECTORS**

**Report on 2003 Implementation**

**1. Background**

In accordance with the agreement between Government of Indonesia and the Executive Committee of the Multilateral Fund (Document UNEP/OzL.Pro/ExCom/38/70, Annex-XI) covering the total phase-out of CFCs in the Refrigeration Sector in Indonesia, including the Refrigeration Manufacturing, Refrigeration Servicing and Mobile Air Conditioning (Manufacturing and Servicing) Sub-sectors, of 3,218 ODP tonnes, would be eliminated by 01 January 2008. The agreement was approved at the 38<sup>th</sup> Meeting of the Executive Committee of MLF, at a total funding level of US\$ 15,627,300, to be provided in six tranches.

The breakdown of the approved overall funding, the disbursement schedule and annual CFC consumption and phase-out control targets, reproduced from the agreement is as below:

Parameter		2002	2003	2004	2005	2006	2007	2008	Total
Annual CFC Consumption Limit in the Refrigeration Sector (ODP tonnes)		NA	3,218	3,018	2,408	1,698	966	0	N/A
Annual CFC phase-out target in the <b>Refrigeration Manufacturing Sub-Sector</b> (ODP tonnes)		0	90*	300	300	300	241	0	1,231
Annual CFC phase-out target in the <b>Refrigeration Servicing Sub-sector</b> (ODP tonnes)		0	0	200	300	322	250	0	1,072
Annual CFC phase-out target in the <b>MAC Sub-sector</b> (ODP tonnes)		0	220	110	110	110	365	0	915
<b>Annual CFC phase-out target in the Refrigeration Sector (ODP tonnes)</b>		<b>0</b>	<b>310</b>	<b>610</b>	<b>710</b>	<b>732</b>	<b>856</b>	<b>0</b>	<b>3,218</b>
<b>Annual CFC phase-out target in the Foam Sector plan (ODP tonnes)</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>129.8</b>	<b>155.7</b>	<b>66.5</b>	<b>0</b>	<b>352</b>
<b>Annual Funding Instalments (US\$)</b>	<b>UNDP (Refrigeration Manufacturing)</b>	<b>1,288,000</b>	<b>2,200,000**</b>	<b>1,762,000</b>	<b>750,000</b>	<b>217,000</b>	<b>181,000</b>	<b>0</b>	<b>6,398,000</b>
	Support Cost	111,920	194,000	156,900	67,500	19,530	16,290		566,140
	<b>UNDP (Refrigeration Servicing)</b>	<b>2,196,758</b>	<b>1,805,987</b>	<b>500,000</b>	<b>250,000</b>	<b>159,555</b>	<b>0</b>	<b>0</b>	<b>4,912,300</b>
	Support Cost	195,708	160,939	43,400	21,300	13,160	0	0	434,507
	<b>World Bank (MAC)</b>	<b>1,369,800</b>	<b>1,347,300</b>	<b>1,347,300</b>	<b>126,800</b>	<b>125,800</b>	<b>0</b>	<b>0</b>	<b>4,317,000</b>
	Support Cost	121,962	119,937	119,937	10,092	10,002	0	0	381,930
	<b>World Bank (Foam)</b>	<b>0</b>	<b>0</b>	<b>1,725,000+</b>	<b>1,050,000</b>	<b>147,564</b>	<b>35,000</b>	<b>0</b>	<b>2,957,564</b>
Support Cost			129,375	78,750	11,067	2,625		221,817	
<b>Total Annual Funding Instalments (US\$)</b>		<b>4,854,558</b>	<b>5,353,287</b>	<b>5,334,300</b>	<b>2,176,800</b>	<b>649,919</b>	<b>216,000</b>		<b>18,584,864</b>
Total Support Costs (US\$)		429,590	474,876	449,612	177,642	53,759	18,915		1,604,394
<b>Total Costs to MLF</b>		<b>5,284,148</b>	<b>5,828,163</b>	<b>5,783,912</b>	<b>2,354,442</b>	<b>703,678</b>	<b>234,915</b>		<b>20,189,258</b>

\* Through ongoing projects

\*\* An advance of US\$ 600,000 was released from the second tranche of US\$ 2,200,000 in July 2003 for the UNDP Refrigeration Manufacturing Sector Phase-out Plan

+ An initial funding of \$100,000 was released at the 42<sup>nd</sup> ExCom Meeting

## **2. Preparatory Activities**

### **2.1 Refrigeration Manufacturing Sector - UNDP**

- The CFC phase-out activities at six individually implemented projects were completed during 2003, leading to a phase-out of 90 ODP Tonnes, in accordance with the agreed target for this sector (see Annex-1 for details).
- The first tranche of US\$ 1,288,000 was received by UNDP in August 2002. An additional US\$ 600,000 was released as advance from the second tranche, in August 2003.
- It was agreed by UNDP and KLH that the project would be implemented through the NEX (National Execution) modality.
- The UNDP first-tranche project document was prepared and submitted to KLH in December 2002.
- UNDP and KLH agreed on the Operational Mechanism for Implementation (OMI), which delineated the roles and responsibilities of the various stakeholders, in January 2003.
- The first-tranche project document was signed by Government in April 2003.
- The UNDP first-tranche project document was fully signed for all parties in May 2003.

### **2.2 Refrigeration Servicing Sector - UNDP**

- The first tranche of US\$ 2,196,758 was received by UNDP in December 2002.
- It was agreed by UNDP and KLH that the project would be implemented through the NEX (National Execution) modality.
- The UNDP first-tranche project document was prepared and submitted to KLH in February 2003.
- UNDP and KLH agreed that the Operational Mechanism for Implementation (OMI), which delineated the roles and responsibilities of the various stakeholders and was earlier designed for implementing the INS/02/G66 – Refrigeration Manufacturing Sector Plan would be also followed for implementation of the IND/03/G61 – Refrigeration Servicing Sector Plan
- The first-tranche project document was signed by Government in August 2003.
- The UNDP first-tranche project document was fully signed for all parties in August 2003.

## 2.3 MAC Sector - World Bank

- The first tranche of US\$ 1,369,800 was released upon approval of the plan at the 38<sup>th</sup> Meeting of the Executive Committee held in November 2002.
- It was agreed by KLH and the World Bank that the project would be implemented through the national execution modality.
- KLH, World Bank and the UNDP agreed that the Sector Phase-out Plan Management and Coordination Unit (SPMCU), which KLH had earlier organized with the assistance of UNDP for supporting the implementation of the Refrigeration Manufacturing and Refrigeration Servicing plans, would be utilized for overseeing the implementation of the MAC Sector Plan, with suitable enhancement in staffing and cost sharing. Accordingly an additional operational assistant was added to the SPMCU to support the MAC Sector activities.

## 3. Investment Components

### 3.1 Refrigeration Manufacturing Sector - UNDP

#### *Enterprise Participation*

The first list of participating enterprises was provisionally endorsed by KLH prior to the signature of the project document in May 2003. Preparation for procurement activities was initiated well before endorsement of recipient enterprises and signature of project document. Upon verification of the enterprise baselines by KLH and UNDP, the final endorsement of the 45 enterprises for participation in the first batch for implementation, was provided by KLH to UNDP in August 2003. Upon completion of all activities in these enterprises targeted in 2004 and 2005, the CFC phase-out that would be achieved, would contribute 454.8 ODP tonnes to the 2004 and 2005 annual CFC phase-out targets.

#### *Procurement*

- UNDP announced the Invitations for Expressions of Interest for prospective suppliers of the equipment to be procured under this project in January 2003. The Invitations for Expressions of Interest were posted in the websites of UN Development Business, IAPSO and UNDP-Jakarta for one month.
- UNDP prepared the technical specifications for the equipment to be procured for the first batch of enterprises in February 2003. UNDP also finalized the short list of vendors for the international competitive bidding exercise, based on the roster of existing suppliers and based on the evaluation of responses to the Expressions of Interest.
- The Invitations to Bid (ITB) for the equipment to be procured for the first batch of 45 enterprises, based on the above, were issued by UNDP in February 2003. Four different invitations to bid, covering the different types of equipment required were issued to a total of 6-8 vendors for each type of equipment.

- The bids received were evaluated in March 2003. The process of approval from UNDP's procurement committees was completed in August 2003.
- The process of finalization of the vendors and issuance of purchase orders was completed in September 2003. The total funds committed for the procurement for the first batch of participating enterprises, amount to about US\$ 1.6 million.

### **3.2 Refrigeration Servicing Sector - UNDP**

#### **3.2.1 Recovery/Recycling Programme**

##### *Enterprise Participation*

The recovery/recycling programme targeted initiating participation of about 385 servicing establishments during 2003. About 188 larger-sized servicing establishments were identified by SPMCU in collaboration with *Asosiasi Bengkel Electronic Indonesia* (Indonesia Electronic Service Association). The first list of about 188 servicing establishments was provisionally endorsed by KLH in September 2003 for participating in the recovery/recycling programme. A survey of training establishments was carried out during May-July 2003 by KLH/SPMCU with assistance from Institut Teknologi Bandung (ITB). About 134 training establishments were identified, for provision of demonstration recovery/recycling equipment.

##### *Procurement*

- UNDP announced the invitations for Expressions of Interest for prospective suppliers of the recovery/recycling equipment to be procured under this project in April 2003. The invitations for Expressions of Interest were posted in the websites of UN Development Business, IAPSO and UNDP-Jakarta for one month.
- UNDP prepared the technical specifications for the equipment to be procured for the first batch of enterprises in October 2003. UNDP also finalized the short list of vendors for the international competitive bidding exercise, based on the roster of existing suppliers and based on the evaluation of responses to the Expressions of Interest.
- The Invitations to Bid (ITB) for the equipment to be procured for the first batch of participating servicing and training establishments, based on the above, were issued by UNDP in October 2003.
- The further procurement steps, such as evaluation of bids, UNDP procurement committee approvals and finalization of vendors were completed in December 2003.

Upon completion of all activities in the first batch of servicing and training establishments targeted in 2004 and 2005, the CFC reduction in servicing that would be facilitated, would contribute about 154 ODP tonnes to the 2004 and 2005 annual CFC phase-out targets. The funds committed for procurement of equipment for the first batch of participating establishments, amount to about US\$ 1 million.

The identification of participating service establishments for the second batch, estimated at about 300 medium-sized servicing establishments was carried out by SPMCU in collaboration

with Asosiasi Bengkel Elektronik Indonesia. Of these, endorsement for 188 establishments was provided by KLH to UNDP in December 2003. The completion of all activities in this second batch of participating servicing establishments is expected to result in an additional 120 ODP tonnes in reduction of CFC usage in servicing during 2004 and 2005, contributing to CFC reduction targets those years.

### 3.2.2 Pilot Retrofitting/Replacement Demonstration Programme

The process of identifying about 70 representative end-users to participate in the retrofitting/replacement demonstration programme has been initiated. Preliminary screening of about 28 supermarkets, 13 hotels, 7 hospitals, 5 restaurants, 5 marine installations and 10 industrial installations (total 68) has been completed. The mechanism of participation in the Plan and for providing assistance to these end-users is being finalized. The demonstration retrofitting/replacement activities are expected to be completed at these end-users between end-2004 and mid-2005, which in turn is expected to accelerate retrofitting/replacement actions in the end-user sector, leading to a reduction in CFC usage in servicing by about 40 ODP tonnes during 2004.

### 3.2.3 Training Programmes

The Master Trainers programme was initiated during 2003. The candidates for the Master Trainers programme were drawn from major servicing establishments and training establishments. Institut Teknologi Bandung (ITB) was retained to carry out the training tasks. The curriculum for the Master Trainers was established by ITB in consultation with KLH and UNDP and comprised of introduction to ozone layer protection, refrigeration principles, refrigerants, refrigeration equipment servicing, recovery and recycling both theory and practice. Training sessions were organized in major cities, Bandung - attended by 18 participants, Jakarta - attended by 23 participants, Semarang - attended by 23 participants and Surabaya attended by 27 participants, during October and November 2003. The training sessions were concluded with a written examination and 82 out of the 91 participants passed the examination and were issued certificates signed by KLH and ITB.

The remainder of this programme is expected to continue during 2004 and targeted for completion by end-2004, resulting in creation of a pool of about 150 Master Trainers, who would in turn conduct training for the subsequent Technician Training programme.

## **3.3 MAC Sector - World Bank**

### 3.3.1 Recovery/Recycling Investment Programme

This component focuses on enabling the MAC servicing establishments to physically reduce CFC usage in their servicing activities. The main activity under this component is to assist the participant MAC servicing establishments to build their capacity in best practices in MAC servicing by improving their knowledge and techniques for managing CFCs in the MAC systems by providing equipment and training for recovery and recycling for refrigerants. This programme targeted a total CFC-12 consumption of 220 ODP tonnes by the end of 2003.

The implementation of investment activities as well as the recovery/recycling programme is being carried out by PT. Dasa Windu Agung (DWA) as the group coordinator, through a Sub-

grant Agreement Document of July 17, 2003. DWA is responsible for procuring and distributing the recovery and recycling equipment to the selected MAC servicing establishments. During 2003, DWA surveyed 260 MAC servicing establishments of which, 216 were verified and endorsed for participation by KLH. These 216 enterprises account for a cumulative consumption of 254.5 ODP tonnes, which exceeds 2003 phase-out target of 220 ODP tonnes.

### 3.3.2 Training

The distribution of MAC recovery and recycling equipment is expected to be beneficial only if the operators of such equipment were provided with the necessary skills and knowledge base for proper use of this equipment that would result in emission reductions. It is understood that most of MAC technicians in Indonesia never had a proper training, gaining their skill only by practical and informal experience. The activity of Training of Trainers has been designed to create a pool of trainers that will train MAC technicians in their respected areas. The activity consists of development of curriculum, recruiting instructors, and identifying candidates for trainees, through collaboration with training establishment already identified in the preliminary stage. This process is underway.

## **4. Non-Investment (Policy and Management Support) Components**

### **4.1 Sector Phase-out Plan Management and Coordination Unit (SPMCU)**

- The procedures for acquiring dedicated premises within the KLH, for the SPMCU were completed and the premises were assigned.
- The recruitment process and appointment of the National Programme Manager for the Sector Phase-out Plan Management and Coordination Unit and staff, was completed by KLH with UNDP assistance and the selected candidates resumed duties from June 2003.
- The logistics and infrastructural arrangements, such as furniture, office equipment, communication, etc. for the functioning of SPMCU were completed and SPMCU was fully functional from June 2003.

### **4.2 Enterprise Participation Mechanism**

- The operational mechanism for enterprise participation in the Plan was finalized by KLH in consultation with UNDP and the World Bank.
- The modalities and procedures for verification of baseline of participating enterprises were finalized during 2003. This included development of documentation requirements and obtaining commitments from the enterprises in line with KLH regulations.

### **4.3 Policy and Regulatory Actions**

- KLH continued the implementation and enforcement of the Government of Indonesia regulations related to ODS import and distribution.



- KLH has now fully constituted and operationalized the National Steering Committee and also the Technical Committee, to coordinate all policy and regulatory actions, related to compliance with the Montreal Protocol.
- KLH has initiated interactions with the District-level Environmental Impact Management Agencies (BAPPEDALDA), through interaction meetings and workshops; in order to enlist their cooperation and build their capacity for enforcement of regulations related to ODS.
- To effectively formulate and implement responses to illegal CFC trade and related issues, KLH has initiated steps to carry out a major modification of the current licensing system. KLH has also initiated formulation of a new regulation for instituting a registration and reporting system for CFC usage, which is targeted for being into effect by early 2005. The targeted outcomes of these regulations are to provide the government with adequate and timely information, in order to closely monitor and control the CFC usage.
- Interaction meetings were held with major distributors and traders of CFCs and with representatives of industry associations related to Refrigeration and MAC servicing. This is expected to lead to the institutionalizing these contacts and result in formation of a core group of industry stakeholders, to increase involvement and obtain industry commitments for the successful achievement of the phase-out targets and control measures under the Plan.
- Under the Import and Export Monitoring and Control System for ODS (World Bank), a training workshop for customs agencies was held, for building their capacity for carrying out effective enforcement of the prevailing and planned ODS regulations, as well as to conduct studies to improve the system.

#### **4.4 Awareness Actions**

##### Refrigeration Manufacturing Sector

Two workshops were held in January 2003. The first workshop targeted prospective recipient enterprises under the Plan, for introducing the Plan and for briefing them on the roles, responsibilities, mechanism, procedures, terms and commitments for participation. About 70 enterprises attended the workshop. The second workshop targeted government and institutional stakeholders and decision makers, for briefing them on the government level policy and regulatory actions to be taken as a part of Plan implementation. About 50 persons attended. The workshop highlighted the roles of various line ministries and departments in the Plan implementation, reinforcing the need for coordinated actions and included panel discussions on experiences of policy measures in other Article 5 countries.

## Refrigeration Servicing Sector

The first workshop for government and institutional stakeholders and decision makers was held in March 2003 in Jakarta and was attended by 105 persons from various government agencies, departments and ministries. The workshop objective was capacity building of stakeholders, to familiarize them with policy/regulatory experiences from other countries and to emphasize the need for developing effective regulatory and enforcement mechanisms.

The following workshops were held during 2003, to identify servicing establishments and to encourage their participation in the recovery/recycling programme. Over 200 recipients were identified as a result of these workshops:

Jakarta, August 2003, 86 participants (organized jointly with ABE)

Jakarta, October 2003, 120 participants

Surabaya, August 2003, 56 participants

Medan, August 2003, 42 participants

Denpasar, December 2003, 42 participants

Palembang, December 2003, 45 participants

## MAC Sector

TA activities under the MAC Sector Plan's 2004 Annual Implementation Programme concentrate on the following: (a) strengthening the overall institutional framework for phase-out; (b) provides regulatory support; (c) public awareness, (d) management, monitoring and evaluation of the project and enhancement of capabilities of participating institutions under the SPMCU; (e) project implementation that will be subcontracted to an independent institution, and, (f) information exchange. The activities carried out in the first implementation programme are as follows:

- *Workshops to MAC service shop personnel involved in implementation of phase-out activities.* Six workshops have been carried out in Jakarta (4 times), Bandung, and Surabaya. These workshops were attended by 235 service shop owners or their representatives, prior to receiving the recycling machines. Statement and commitment letters had been obtained during the survey of identification of these service shops.
- *National Workshop.*
- Promotional programme was launched during the commemoration of International Ozone Day by organizing journalist outreach, displaying banners at the strategic places in Jakarta. Costs were shared between the Refrigeration Manufacturing, Servicing and MAC Sector Phase-out Plans.
- *Train the trainer programme.* This programme has been organized on 6 to 10 September, participated by trainees represented 20 training institutions across the country. The curriculum comprised the principles of refrigeration and refrigerants, MAC system, leak detecting and repairing, retrofitting from CFC base to non-CFC base, principle and practice of recovery, recycling and recharging, and general good MAC servicing practice.

- *Development of Standard Inspection Manual.* The first version of standard inspection manual for identification of refrigerant type in the MAC unit was produced and distributed to the trainees of the Train the Trainers programme on 10 September. This version would be further developed and distributed during the upcoming Train the Technicians programme.
- *Development and printing of pamphlets.* Stickers for car owners to identify refrigerant type in the MAC unit, name of the shop that last worked on the system, and detailed of work done would be produced and distributed during the train the technicians programme and together with the distribution of R&R equipment to the beneficiaries.
- *Training.* Train the technicians programme was in preparation. It is projected that the technicians from the 216 MAC service shops receiving the first batch of Recovery and Recycling machines would attend the training by the end of the year. Proposals from the appointed training centers that sent their staff to the Train the trainers programme (iv) were being reviewed.

## 5. CFC Phase-out and Results

The annual CFC phase-out target for 2003 in the Refrigeration Sector was 310 ODP Tonnes, 90 ODP tonnes to be achieved through the completion of ongoing projects in the Refrigeration Manufacturing Sector and 220 ODP Tonnes to be reduced in the MAC Servicing Sector. Through the completion of six ongoing projects during 2003, the annual CFC phase-out target in the Refrigeration Manufacturing Sector of 90 ODP Tonnes and the contribution of 254.5 ODP tonnes contributed by the 216 MAC servicing establishments participating in the MAC Recovery and Recycling programme, lead to achievement of the 2003 phase-out target. (See Annex-1 for details).

The completion of the enterprise-level activities in the enterprises included in the first batch under the Refrigeration Manufacturing Sector is envisaged during 2004. This would lead to the phase-out of at least 300 ODP tonnes, which is the CFC phase-out target for that year.

## 6. Performance Audit

In compliance with the provisions of the Agreement (Document UNEP/OzL.Pro/ExCom/38/70, Annex-XI), a performance verification by a national independent entity has been commissioned by UNDP in late September 2004 to verify that the agreed CFC phase-out targets and consumption limits for 2003 have been achieved. The performance verification will verify the national level CFC consumption in the Refrigeration Sector for 2003, based on the data available from the designated importer(s) and the data available from the relevant ministries and customs. In addition, through plant visits to a select number of completed projects and inspection of relevant records at these projects, the CFC phase-out of 90 ODP tonnes achieved in the Refrigeration Manufacturing Sector and 254.5 ODP tonnes contributed from the MAC Sector will be confirmed.

It is expected that the verification of the data will show that Indonesia meets the 2003 consumption control limits in the refrigeration section stipulated in the Agreement between the MLF and the Government of China. UNDP expects to have the report of the performance verification available

prior to the 44<sup>th</sup> ExCom Meeting and that a supplementary report will be prepared for the review of the Multilateral Fund Secretariat and the members of the Executive Committee.

## **7. Brief report on activities carried out during 2004**

### Refrigeration Manufacturing Sector

The second batch of 34 participating enterprises was endorsed by KLH to UNDP in January 2004. The equipment purchase orders for the second batch were issued by mid-2004. The cumulative CFC consumption of these enterprises amounted to about 231 ODP tonnes.

The equipment procured for the first batch of enterprises has been distributed to the respective recipients and the installation, commissioning and training is in process at the respective project sites. Activities at 13 enterprises were completed as of August 2004. It is expected that the activities at the remaining enterprises would be progressively completed by end-2004, thus achieving or exceeding the phase-out target for 2004, of 300 ODP Tonnes.

The verification of baselines for the subsequent batches of participating enterprises was carried out on an ongoing basis. A coordination meeting was held in May 2004, with the Department of Customs and Ministry of Industry and Trade, for discussions on the planned regulation changes covering an import quota system and registration/reporting system for CFC usage. One technology workshop was held in August 2004 for recipients of the first batch of participating enterprises.

### Refrigeration Servicing Sector

The procurement of recovery/recycling equipment for the first batch of participating servicing and training establishments has been completed. The equipment is presently under distribution.

The Master Trainers programme is ongoing, to meet the target of creating 150 master trainers during 2004 (about 90 were created in 2003). The preparations for implementing the Technician's Training programme are underway and the same is expected to commence soon.

A mini workshop-cum coordination meeting for facilitating development of a National Competency Standard for Refrigeration Technicians was held in August 2004, with the representatives of the related government departments and industry associations. The expected outcome is expediting the institutionalization of such a standard during 2005.

Workshops will continue to be conducted for potential beneficiaries in other locations, such as Padang etc.

### MAC Sector

#### *Investment Component of the MAC Sector Plan:*

Commitment Workshops: There were 6 successful commitment workshops conducted for service shops and technicians, 4 in Jakarta, 1 in Bandung, 1 in Surabaya starting from May to August 2004, attended by 235 participants. Outcome of workshop was to inform service shops owners and technicians about the programme, the rights and responsibilities of beneficiaries and information

regarding the delivery of equipment, and to fulfill the precondition to receiving equipment (commitment letter are received during survey and beneficiaries and then reconfirmed during the workshops by the SPMCU and the group coordinator).

108 workshop establishments positively responded to participate and have signed the contract commitments. These beneficiaries contribute to a cumulative ODP impact of 110 tons.

- **Technical Assistance: Training of trainers.** The distribution of servicing equipment would only be beneficial if the operators of such equipment were provided with the necessary skill and knowledge. It was understood that most of MAC technicians in Indonesia never had a proper training, gaining their skill only by working in the workshops. To get a standard technical capacity for all technicians, a master trainer was appointed. They were assigned to set up training for trainer programme by developing curriculum and certification of training centers that have passed training of trainer.
- **Train the Trainer's Workshop.** The Sector Plan Management and Coordination Unit (SPMCU) of the KLH and Dasa Windu Agung [DWA]) completed a successful train-the-trainers workshop (September 6 –10) for 20 training centers. The trainers will be certified after successful completion of the training and passing the certification exam – practical and theoretical components. By early October, the selected trainers will provide training to the enterprises by selected training centers following the establishment of the train for trainers (TOT) programme. Certification has been prepared, it will be handed after they passed training tests. The training evolved theoretical reviews of technical application to service MAC refrigeration system; learning method to properly handle services of refrigerant using recycling equipment, etc..
- **Training of technicians** is expected to be carried out in 4th quarter of 2004. There are 216 technicians to be trained covering cities in Java. Completion of training of technicians will enable workshop establishments to properly operate and maintain the recycling equipments. Standard value for service of MAC refrigeration system is attained. More than 300 technicians have registered to participate in the training, it is even anticipated that this figure will be doubled if two technicians are sent by each workshop establishment.

#### *Policy Action and Regulation:*

KLH conducted 2 successful working group discussions for policy makers to introduce the MAC programme and to discuss policy measures or regulations for the MAC programme was held in 15 May and 20 August 2004 in Bogor. On 20 August 2004 the working group discussed strategy for public awareness and policy regulation – in coordination with the entire refrigeration sector. A core technical working group has been set up to discuss ODS (including MAC) policy actions, comprising of government stakeholders and professional associations. Discussions are ongoing and further meetings are scheduled in the coming months to discuss policy actions such as bans on new MAC installations with CFC, a ban on venting of CFC-12, compulsory use of recovery until when the system is serviced or decommissioned, a prohibition of mislabeling containers.

- **Meetings with Custom** have been conducted to evaluate where major ports in Indonesia need refrigerant identifying tools.

- Procurement of 20 units of refrigerant identifiers is underway. Distribution expects to be realized 4<sup>th</sup> quarter 2004.
- Certification scheme for participating MAC service shops are being evaluated.
- Interaction meetings were held with major distributors and traders of CFCs and with representatives of industry associations related to refrigeration and MAC servicing. This is expected to lead to the institutionalizing these contacts and result in formation of a core group of industry stakeholders, to increase involvement and ensure commitments to cooperation for the successful achievement of the phase-out targets and control measures under the Plan.

Public awareness activities on the environmental impact of the MAC programme started from 17 May and are ongoing. Activities to-date include the development of calendars and posters for distribution. Awareness raising events such as fun walks in Jakarta, campaign for ozone friendly products, workshops for green journalists for ozone, and banners are being developed currently in September 2004 (to celebrate National Ozone Day). The promotional programme to encourage public to have MAC system repaired by certified technicians included in the strategic ODS Phase-out programme public awareness plan of KLH was launched during the commemoration of International Ozone Day by organizing journalist outreach, displaying banners at the strategic places in Jakarta.

#### Foam Sector

The Foam Sector Plan was approved at the 42<sup>nd</sup> ExCom Meeting in March 2004 for the amount of \$2,957,564. An advance amount of \$100,000 of the \$1,725,000 first tranche for the implementation of the 2004 Annual Implementation Programme was released at the same Meeting for the World Bank to undertake initial activities to achieve the 2005 reduction target of 129.8 ODP tonnes of CFC-11.

The Foam Sector Plan will facilitate elimination of all the remaining eligible CFC consumption in the foam sector in Indonesia, upon completion. The Foam Sector Plan will be implemented through four annual implementation programmes and together with the implementation of the approved ongoing projects in the foam sector, is expected to result in the complete phase-out of CFCs in the foam sector in Indonesia in four years. The Foam Sector Plan will address the conversion requirements in the foam sub-sector for ensuring a timely, sustainable and cost-effective phase-out, through a combination of policies and technical assistance components investment schemes, and policy/management support components.

KLH and the World Bank agreed upon implementation arrangements for the sector plan implementation. The KLH will provide the draft sub-grant agreement between KLH and the group coordinator (Dasa Windu Agung).

*Investment Component:* The management of the investment scheme of the foam sub-sector was organized by the signing of the Sub-grant Agreement Document between the Ministry of Environment and Dasa Windu Agung (DWA), as the group coordinator, and representative of the beneficiaries. A work plan for investment activities and a TOR for the Group Coordinator were developed

*Non-Investment Component:* The Sector Plan Management and Coordination Unit (SPMCU) would coordinate the policy and regulatory activities. For the non-investment component (public awareness and technical assistance), it was decided that Ministry of Environment will request 3 qualified firms to send expressions of interest, and will also sign a SGA with the selected firm by end of October 2004.

### Policy and Management

- KLH has continued follow-up on the procedures needed to effect the modification of existing regulations on CFC imports (instituting a realistic licensing/quota system and new regulations for registration/reporting of CFC usage), with the relevant government departments and stakeholders. A workshop for government policy/decision-makers was held in August 2004, to discuss the various options and modalities for accomplishing these regulatory changes.
- As of September 2004, with the assistance of UNDP and World Bank, KLH is in the process of retaining a suitable independent agency/institution to carry out the verification of the CFC phase-out achieved during 2003.

## **8. 2005 Annual Implementation Programme and Release of 2004 Funding Tranche**

The 2005 Annual Implementation Programme is attached in Annex-2, with a request to the 44<sup>th</sup> Meeting of the Executive Committee for release of the third (2004) funding tranches for the four sectors, as below:

<b>Sector</b>	<b>Agency</b>	<b>Tranche Amount (US\$)</b>	<b>Agency Fees (US\$)</b>	<b>Total (US\$)</b>
Refrigeration Manufacturing	UNDP	1,762,000	156,900	1,918,900
Refrigeration Servicing	UNDP	500,000	43,400	543,400
MAC	World Bank	1,347,300	119,937	1,467,237
Foam *	World Bank	1,625,000	121,875	1,746,875
<b>Total</b>		<b>5,234,300</b>	<b>442,112</b>	<b>5,676,412</b>

\* Amount requested for the Foam Sector reflected balance of 2004 tranche, after initial \$100,000 was released at 42<sup>nd</sup> ExCom Meeting

**INDONESIA**  
**Refrigeration Sector Phase-out Plan**

**Projects in the Refrigeration Manufacturing Sector Completed during 2003**

<b>UNDP Project Number</b>	<b>MLF Project Number</b>	<b>Project Name</b>	<b>Approved Grant (US\$)</b>	<b>ODS (MT/y)</b>	<b>ODP (tonnes/y)</b>	<b>Remark</b>
INS/01/G67	IDS/REF/35/INV/131	PT Nikoteknik	238,903	29.73	27.90	Target 11/2003
INS/01/G66	IDS/REF/35/INV/132	PT Sapporo Mestika	153,768	11.58	11.18	Target 11/2003
INS/01/G61	IDS/REF/35/INV/133	PT Hatindo Metal Utama	145,894	10.15	9.59	Target 11/2003
INS/01/G63	IDS/REF/35/INV/134	PT Leoindo Kreasi	119,394	16.81	15.74	Target 11/2003
INS/01/G65	IDS/REF/35/INV/135	PT Alfa Metalindo Agra	146,960	10.23	9.66	Target 11/2003
INS/01/G62	IDS/REF/35/INV/136	PT Gastro Gizi Sarana	221,049	16.49	15.50	Target 11/2003
<b>TOTAL</b>			<b>1,025,968</b>	<b>94.99</b>	<b>89.57</b>	

**Notes:**

1. All enterprises achieved all project objectives and met all project obligations, such as phase-out of CFCs, phase-in of CFC-free production, depletion of CFC stocks, destruction of redundant and replaced baseline equipment, etc. upon completion in November 2003.
2. Hand Over Protocols (HOPs) for these projects were issued and signed during December 2003.



**INDONESIA**  
**Phase-out of CFCs in the Foam and Refrigeration Sectors**  
**2005 Annual Implementation Programme**

**1. Data**

Country	Indonesia	
Year of plan	2005	
Number of years completed	3	
Number of years remaining under the plan	3 (2005, 2006 and 2007)	
Target ODS consumption of the preceding year ( 2004 )	3,018	
Target ODS consumption of the year of plan (2005)	2,408	
Level of funding requested (US\$)	Refrigeration Manufacturing	1,762,000 (UNDP)
	Refrigeration Servicing	500,000 (UNDP)
	MAC	1,347,300 (World Bank)
	Foam	1,625,000 (World Bank)
	<b>Total</b>	<b>5,234,300</b>
Lead implementing agency	UNDP	
Co-operating agency (ies)	World Bank	

**2. Targets**

Indicators		Preceding Year (2004)	Year of Plan (2005)	Reduction
<b>Supply of ODS in Sector (ODP tonnes)</b>	Import	5,064	3,678	1,386
	Production *	N/A	N/A	N/A
	<b>Total (1)</b>			
<b>Demand of ODS in Sector (ODP tonnes)</b>	Manufacturing	3,187	2,111	1,076
	Servicing	1,877	1,567	310
	Stock piling	N/A	N/A	N/A
	<b>Total (2)</b>	<b>5,064</b>	<b>3,678</b>	<b>1,386</b>

\* For ODS-producing countries

**3. Industry Action**

Sector	Consumption Preceding Year (2004) (1) **	Consumption Year of Plan (2005) (2) **	Reduction within Year of Plan (1) - (2)	No. of Projects Complete	Number of Servicing Related Activities	ODS Phase-Out (ODP tonnes)
Refrigeration Manufacturing Sector	8,41	841	300	See below	N/A	300
Refrigeration Servicing Sector	1,072	872	200	See below	See below	200
MAC Sector	805	695	110	See below	See below	110
Foam *	2,046	1,270	776	See below	See below	776
<b>Total</b>	<b>5,064</b>	<b>3,678</b>	<b>1,386</b>	<b>See below</b>	<b>See below</b>	<b>1,386</b>

\* Phase-out to be achieved through completion of on-going projects.

The phase-out objective of the 2005 Annual Implementation Programme for the Foam Sector Plan is to ensure that the national CFC-11 phase-out target of 130 ODP tonnes will occur by the end of 2005. Industrial actions for the foam sector will focus on validation surveys of enterprises in rigid foam to verify baseline information, assess current conditions and to confirm chosen conversion technology, procurement of replacement and retrofitting of foaming equipment, and subsequent delivery, installation, commissioning and trial at enterprise sites to achieve the 130 ODP tonnes of CFC-11 phase-out for 2005. All contracts for these 130 ODP tonnes would have been signed in 2004. Indonesia is requesting the release of the balance of US\$ 1,625,000 for the 2004 annual implementation programme as agreed in the overall Foam Sector Phase-out Plan. The fund will be allocated to foam enterprises to convert from CFC-11 foam production to non-CFC foam production and for technical assistance activities. Planned activities for enterprise level investment component are included in Annex 3.

#### 4. Technical Assistance

Activity	Description	
<b>Refrigeration Manufacturing Sector - UNDP</b>		
Workshop for user industry	Objective	Initiating enterprise participation and phase-out activities
	Target group	Prospective recipient enterprises
	Impact	Obtaining enterprise commitments for time-bound phase-out
Technical Assistance for procurement of equipment	Objective	Initiate procurement procedures for equipment to be provided to recipient enterprises for conversion to non-CFC technology
	Target group	Third and fourth batches of recipient enterprises
	Impact	Finalization of specifications and vendor shortlists, international competitive bidding and issuance of purchase orders/contracts leading to (upon completion) a phase-out of about 150 tonnes during 2005 and 150 tonnes during 2006.
Completion of activities at recipient enterprises from the previous batches	Objective	To confirm completion of equipment installation, commissioning and training activities at the recipient enterprises in the previous batches
	Target group	First and second batches of recipient enterprises
	Impact	Phase-out of about 150 tonnes of CFCs during 2005.
<b>Refrigeration Servicing Sector - UNDP</b>		
Workshops for Servicing establishments	Objective	Continued participation, commitments and phase-out activities from service establishments and for disseminating technologies and practices in refrigeration servicing to ensure sustainable reductions in CFC usage.
	Target group	Prospective recipient service establishments. It is proposed to organize a series of one-day workshops regionally
	Impact	Participation agreements with servicing establishments in place for the third and subsequent batches of the recovery/recycling programme.
Technical Assistance for procurement of equipment	Objective	Initiate procurement procedures for equipment to be provided to the third batch of recipient servicing establishments for recovery/recycling
	Target group	Service establishments (third batch)
	Impact	Finalization of specifications and vendor shortlists, international competitive bidding and issuance of purchase orders/contracts
Technical Assistance for retrofitting/replacement demonstration	Objective	Completion of activities for retrofitting/replacement of CFC-based equipment and demonstration of retrofitting/replacement technologies.
	Target group	About 50 end-users identified and selected for participation in the programme during 2005
	Impact	Facilitating early retrofitting/replacement decisions for CFC-based equipment by end-users, thereby leading to reductions of about 100 MT in servicing by 2005
Training	Objective	Training of technicians
	Target group	Refrigeration servicing technicians (about 6,000 in the first batch)
	Impact	Delivery of training inputs to technicians, in order to introduce good practices and awareness thereby facilitating indirect emission reductions amounting to about 40 tonnes during servicing by 2005.

#### 4. Technical Assistance (Cont'd)

Activity	Description	
<b>MAC Sector – World Bank</b>		
Training	Objective	<i>Workshops for MAC service shop personnel involved in implementation of phase-out activities</i>
	Target group	MAC service shop technicians and owners
	Impact	workshops to MAC service shops' owners and technicians is needed initially for them to prepare commitment participation and other terms set forth, to monitor and report CFC-12 consumption, and to learn operating procedures in MAC sector phase-out approach. The workshop will need to be repeated every year in the first few years of implementation;
National workshops	Objective	To introduce and promote (a) MAC sector phase-out strategy, (b) policies already promulgated and new policies to be introduced for MAC sector phase-out, (c) government commitment to CFC-12 phase-out, and (d) alternative technology.
	Target group	Proposed participants include national, provincial, and local level policy makers, sector ministries related to MAC industries, MAC professional associations and related industry; Public awareness of the environmental and economic impact of ozone layer depletion via newspapers, seminar and/or electronic media.
Train the Trainer Program	Objective	The programme will continue from the second implementation period into the 2005 Annual Implementation Plan period. This programme is organized to minimize (a) current practice of topping up refrigerant without fixing leaks; (b) education for proper service method. Under the planned duration, the programme will concentrate on the following: <ul style="list-style-type: none"> <li>- Develop and upgrade, if possible the existing training requirements and materials used for MAC training offered by training centers/technical institutes assisted by international and/or local experts appointed by NOU;</li> <li>- Invite potential training center and technical institutes; including the regional and provincial training centers for accreditation for respective courses.</li> </ul>
	Target group	Potential training center and technical institutes
	Impact	At the end, trainers who have attended the training and passed technical tests shall receive certification.

Activity	Description	
<b>Foam Sector – World Bank</b>		
Awareness Raising programme	Objective and activities	<p>a.) Awareness programme will be developed through setting up of advertisements in magazines, environment newspaper, website detailing the Foam Sector Plan, country commitment, the necessity of phase-out of CFC in the foam industrial sector. All these were also promoted in different workshops.</p> <p>b.) Workshops will be conducted to inform about the CFC phase-out plan in general and foam sector phase-out plan in particular for foam enterprises that are considered eligible during revalidation surveys:</p> <ol style="list-style-type: none"> <li>a. Provide information to enterprises to phaseout CFC-11 and adopt environmentally benign substitute technologies;</li> <li>b. Ensure the phaseout target of CFC-11 consumption in the foam sector is achieved according to schedule;</li> <li>c. Encourage the propagation of low cost, technically suitable substitutes to replace CFC-11 blowing agent;</li> <li>d. Promote the development and dissemination of substitute technology;</li> <li>e. Encourage consolidation and regrouping of enterprises; and</li> <li>f. Ensure that the growth of the foam sector is not affected by meeting the phaseout targets.</li> </ol>
	Target group	Public, potential foam enterprises, and stakeholders
Regulatory and Policy	Objective and activities	<p>a.) Conduct series of workshops to develop policy instruments for the CFC-11 PU foam sector. The objective is to inform the targeted audience about the foam sector phase-out programme, government obligation to comply with agreed-upon overall and annual phase-out targets.</p> <p>b.) Meetings/discussions with equipment suppliers and chemical suppliers to assess current application technology using CFC blowing agent, selection of substitutes with ozone friendly substance and substitute technology</p>
	Target group	Provincial government; local bureaus (Bapedalda), and PU foam enterprises
Project Implementation and Management	Objective and activities	<p>a.) Management activities of the Group Coordinator for handling day to day activities of foam sector phase-out plan:</p> <ol style="list-style-type: none"> <li>i. Set up team work and personnel</li> <li>ii. Training and awareness of personnel</li> <li>iii. Management of the project;</li> </ol> <p>b.) Develop a website about ODS phase-out programme, PU Foam Sector Plan, policy actions to be taken or that have been taken, current phase-out activities and CFC technology and its substitute;</p> <p>c.) Trainings/workshops to improve capability of staff in the Ozone Unit, local expert, potential recipients with objectives to (i) promote the Foam Sector Plan to PU enterprises; (ii) familiarize enterprises with the application and implementation process, and encourage enterprises to participate; (iii) familiarize selected experts on the process and the requirements of the Sector Plan; and (iv) train enterprises included in the annual programme so that the enterprises understand implementation schedule and their responsibilities.</p>
	Target group	Group Coordinator, PU enterprises, Ozone Unit, line ministries officials

Monitoring Activities	Objective and activities	<p>a.) Monitoring/supervision of implementation to report to Ozone Unit:</p> <p>(i) Hiring of local consultant to evaluate participating enterprises that are to be included in the programme by visiting the enterprises, verify data and documentation of enterprises, provide visit report to the Ozone Unit.</p> <p>(ii) Monitor implementation, pre-installation and post commissioning of equipment</p> <p>(iii) Advise for preparation and review of bidding document and participation of bid evaluation, supervision of project progress;</p> <p>b.) Participation in international forum, foam exhibitions and comparative study on foam technology and substitute (2006 and 2007);</p> <p>c.) Set up study on foam industry in Indonesia and technology information to increase willingness to phase out CFC in a voluntary basis, minimize lack of readily available and recommend low cost substitute technologies, limited capital resources, need to maintain quality of products and production, recommended actions, analysis of higher operating costs, lower production qualities, higher safety and health concern (2006 and 2007)</p>
	Target group	PU enterprises,

## 5. Government Action

Policy/Activity Planned	Schedule of Implementation
Type of Policy Control on ODS Import	Continuing enforcement of existing controls
	Establishment of a registration and reporting system for ODS users
	Modification of the existing regulations to introduce a realistic quota/licensing system for ODS imports
Public Awareness	Organization of one public awareness workshop and one workshop for government policy makers and decision makers.
Others	See below

The following activities are proposed for 2005, under the Policy and Management Support component:

- a) Continuing implementation of the operational mechanism for participation by enterprises in the Sector Phase-out Plan and for obtaining phase-out commitments from enterprises.
- b) Verification of baselines of participating enterprises and confirmation of completion of activities at recipient enterprises.
- c) Institution of a National Competency Standard for Refrigeration Technicians.
- d) Further interactions with District-level environment impact management agencies, to formalize the mechanism for decentralized enforcement and monitoring of ODS controls.
- e) Reporting on the 2004 implementation and preparation of 2006 annual implementation programme.

## 6. Annual Budgets

### 6.1 Refrigeration Manufacturing

Activity	Planned Expenditures (US \$)
Sector Plan Management and Coordination unit (SPMCU) operation	35,000
Technical Assistance	95,000
Workshops and awareness	25,000
Equipment	1,375,000
Trials and training	82,000
Policy development and enforcement	15,000
Verification and certification	5,000
Contingencies	130,000
<b>TOTAL</b>	<b>1,762,000</b>

### 6.2 Refrigeration Servicing

Activity	Planned Expenditures (US \$)
Sector Plan Management and Coordination unit (SPMCU) operation	30,000
Technical Assistance	90,000
Workshops and awareness	25,000
Equipment	200,000
Trials and start-up	30,000
Training	100,000
Policy development and enforcement	5,000
Verification and certification	5,000
Contingencies	15,000
<b>TOTAL</b>	<b>500,000</b>

### 6.3 MAC

Activity	Planned Expenditures (US \$)
Sector Plan Management and Coordination unit (SPMCU) operation	60,000
Technical Assistance	24,500
Workshops and awareness	60,000
Equipment	1,202,800
<b>TOTAL</b>	<b>1,347,300</b>

### 6.4 Foam

Activity	Planned Expenditures (US \$)
Ongoing monitoring and operations of SPMUC	34,956
Technical Assistance	45,000
Workshops, Training and awareness	105,000
Investment/Equipment	1,440,044
<b>TOTAL*</b>	<b>1,625,000</b>

\* Amount **does not include** \$100,000 advance released at the 42<sup>nd</sup> ExCom Meeting. The Request for release of the balance of 2004 tranche is \$1,625,000.

## 7. Funding and administrative costs

The funding tranches and administrative support costs for the four sectors requested for the 2005 Annual Implementation Programme, are as below:

<b>Sector</b>	<b>Agency</b>	<b>Tranche Amount (US\$)</b>	<b>Support costs (US\$)</b>	<b>Total (US\$)</b>
Refrigeration Manufacturing	UNDP	1,762,000	156,900	1,918,900
Refrigeration Servicing	UNDP	500,000	43,400	543,400
MAC	World Bank	1,347,300	119,937	1,467,237
Foam *	World Bank	1,625,000	121,875	1,746,875
<b>Total</b>		<b>5,234,300</b>	<b>442,112</b>	<b>5,676,412</b>

\* Amount requested for the Foam Sector reflected balance of 2004 tranche, after initial \$100,000 was released at 42<sup>nd</sup> ExCom Meeting

### Planned Activities for Enterprise level Investment Component

COMPANY	SUB-SECTOR	CFC - 11 Used	ANNUAL ODP TO BE PHASED OUT (MT)			Grant Amount	
			2005	2006	2007	2005	
			Trial	ODP To be phased out	ODP To be phased out	ODP To be phased out	Total (US\$)
<b>Rigid Foam</b>							
Bintang Mas, UD	RPF - Thermoware	5.63	1	5.63	0	0	96891.35
Cipta Karya, CV	RPF - Spray	3.79	1	3.79	0	0.0	96891.4
Mayasari Utama, PT	RPF - Spray	3.08	1	3.08	0	0.0	22891.4
Langgeng Makmur Industri Tbk, PT	RPF - Thermoware	15	1	15	0	0.0	96891.4
Hadi Puteri Kartika Paqsi, PT	RPF - Panel	9	1	9	0	0.0	96891.4
Pangaji Mario Refconindo, PT	RPF - Panel	6.3	1	6.3	0	0.0	102891.4
Bernadi Utama, PT	RPF - Thermoware	2.6	1	2.6	0	0.0	28891.4
Willich Isolasi Pratama, PT	RPF - Pipe	2.05	1	2.05	0	0.0	28891.4
Sadana Ekapraya Amitra, PT	RPF - Panel	0.79	1	0.79	0	0.0	96891.4
Indomatic	RPF - Panel	1.91	1	1.91	0	0.0	96891.4
Citradinamika Interindo	RPF - Panel	3.9	1	3.9	0	0.0	96891.4
Sigma Engineering	RPF - Panel	4.64	1	4.64	0	0.0	96891.4
Harrison, UD	RPF - Panel	0.53	1	0.53	0	0.0	96891.4
Sengon Harpindo Sejati	RPF - Panel	41.6	1	41.6	0	0.0	96891.4
Ditta Insulindo	RPF - Panel	35.67		0	35.67	0.0	96891.4
Sinar Baja Walandra	RPF - Panel	29.00	1	29	0	0.0	96891.4
Sumber Sejahtera Raya	RPF - Panel	27.61		0	27.61	0.0	96891.4
Ero Fibre Glass	RPF - Panel	11		0	11	0.0	96891.4
Shirabu	RPF - Panel	11		0	0	11.0	
Belga Jaya Perkasa	RPF - Panel	0		0	0	0.0	
<b>Total</b>		<b>215.1</b>	<b>15</b>	<b>129.82</b>	<b>74.28</b>	<b>11</b>	<b>1540044.3</b>

\* \$1,540,044 includes \$100,000 advance released at 42<sup>nd</sup> ExCom Meeting