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COMITÉ EJECUTIVO DEL FONDO MULTILATERAL
PARA LA APLICACIÓN DEL
PROTOCOLO DE MONTREAL
Cuadragésima Cuarta Reunión
Praga, 29 de noviembre al 3 de diciembre de 2004

PROPUESTAS DE PROYECTO: CHINA

Este documento contiene los comentarios y las recomendaciones de la Secretaría del Fondo sobre las siguientes propuestas de proyectos:

Espumas	
• Plan sectorial de eliminación del uso de CFC en el sector de espumas de poliuretano: programa anual de 2005	Banco Mundial
Fumigantes	
• Eliminación gradual nacional del metilbromuro (segunda parte)	ONUDI/Italia
Halones	
• Plan sectorial para la eliminación gradual de halones: programa anual de 2005	Banco Mundial
Agentes de procesos	
• Eliminación de la producción y consumo del CTC para agentes de procesos y otros usos no identificados (fase I): programa anual de 2005	Banco Mundial
Producción	
• Plan sectorial para la eliminación gradual de la producción de CFC: programa anual de 2005	Banco Mundial
Refrigeración	
• Plan de eliminación gradual de CFC en el sector de mantenimiento de sistemas de refrigeración	ONUDI/Japón
Solventes	
• Informe sobre la marcha de las actividades de la puesta en ejecución del plan sectorial de solventes para la eliminación de SAO para 2003/2004 y programa de ejecución anual de 2005	PNUD

HOJA DE EVALUACIÓN DE PROYECTO - PROYECTOS PLURIANUALES
PAÍS: CHINA

TÍTULO DEL PROYECTO	**ORGANISMO BILATERAL/ORGANISMO DE EJECUCIÓN**
Plan sectorial de eliminación del uso de CFC en el sector de espumas de poliuretano: programa anual de 2005	Banco Mundial

ORGANISMO DE COORDINACIÓN NACIONAL:	SEPA/FECO

DATOS DE CONSUMO MÁS RECIENTE PARA SAO OBJETO DEL PROYECTO

A: DATOS DEL ARTÍCULO 7 (TONELADAS PAO, 2003, A OCTUBRE DE 2004)

CFC	22.808,80	

B: DATOS SECTORIALES DEL PROGRAMA DE PAÍS (TONELADAS PAO, 2003, A OCTUBRE DE 2004)

SAO	Espumas	Refrigeración	Aero-soles	Solventes	Agente de procesos	Tabaco
CFC	15.348,00	10.745,26	2000,00	2.115,60	76,40	711,00

Consumo de CFC remanente admisible para la financiación (toneladas PAO)	n/c

PLAN ADMINISTRATIVO DEL AÑO EN CURSO: Financiación total 10.827 millones $EUA Eliminación total 2500 ton. PAO.

DATOS DEL PROYECTO		2004	2005	2006	2007	2008	2009	2010	Total
Límites del Protocolo de Montreal (CFC)		57819	28909	28909	8673	8673	8673	0	n/c
CFC-11	*Límite de consumo nacional de CFC-11*	13.100	10.400	7.700	4.130	3.800	300	0	n/c
	Límite de consumo anual del sector de CFC-11	11.666	9.646	7.164	3.821	3.553	102	0	n/c
	Eliminación anual nueva abordada	2.500	2.500	600	551	0	0	0	6.151
CONSUMO TOTAL DE SAO A ELIMINAR		2.500	2.500	600	551	0	0	0	10.651
Costo del proyecto según presentación original ($EUA)		10.903	10.903	3.320	2.676	1.767	1.767	0	53.846
Costos finales del proyecto (000 $EUA):									
Financiación para el Banco Mundial		10.903	10.903	3.320	2.676	1.767	1.767	0	4.766,14
Financiación total del proyecto		10.903	10.903	3.320	2.676	1.767	1.767	0	
Costos de apoyo finales (000 $EUA):									
Costos de apoyo para el Banco Mundial		961,27	961,27	282,8	240,84	159,03	159,03	0	
Total de costos de apoyo		961,27	961,27	282,8	240,84	159,03	159,03	0	
COSTO TOTAL AL FONDO MULTILATERAL ($EUA)		11.864	11.864	3.603	2.917	1.926	1.926	0	
Relación de costo a eficacia final del proyecto ($EUA/kg)									n/c

SOLICITUD DE FINANCIACIÓN: Aprobación de una financiación de tercer tramo (2004) como se indica en los párrafos precedentes.

RECOMENDACIÓN DE LA SECRETARÍA	**Pendiente**

PLAN SECTORIAL PARA LA ELIMINACION GRADUAL DEL USO DE CFC EN EL SECTOR DE LAS ESPUMAS DE POLIURETANO - PROGRAMA ANUAL DE 2005

DESCRIPCIÓN DEL PROYECTO

1. El Banco Mundial presentó el programa de ejecución anual de 2005 a la consideración del Comité Ejecutivo en 44a. Reunión. El documento tiene dos partes:

a) Estado de ejecución del programa anual de 2004 (parte A)

b) Programa de ejecución anual de 2005 (Parte B)

Antecedentes

2. El Acuerdo sobre la eliminación gradual de CFC en el sector de espumas de poliuretano en China se aprobó en 35a. Reunión del Comité Ejecutivo, en diciembre de 2001, a un costo total de 53.846 $EUA millones. El plan de eliminación gradual proporciona objetivos anuales de control del consumo de CFC-11 en el sector de espumas de poliuretano en ese país y el financiamiento relacionado, de 2002 a 2009. El primer programa de ejecución para el período de diciembre de 2001 a diciembre de 2002 se aprobó en la 35a. Reunión, el segundo programa de ejecución, que abarca 2003, en la 38a. Reunión, y el tercer programa de ejecución para 2004 en la 41a. Reunión. Hasta el momento se liberó una cantidad total de 36.376.170 $EUA, que incluye los costos de apoyo de 2.963.170 $EUA para el Banco Mundial, en las tres partes destinadas a eliminar 7.000 toneladas PAO de CFC-11.

3. Los objetivos de control de CFC y el financiamiento equivalente se indican en la Tabla 1 siguiente.

Tabla 1: Objetivos de control para el consumo CFC-11 en el sector de espumas de poliuretano en China (toneladas PAO) y calendario de financiamiento conexo (000 $EUA)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Límite anual nacional de consumo de CFC-11 (toneladas PAO)	17.200	15.500	13.100	10.400	7.700	4.130	3.800	300	0	
Límite anual de consumo de CFC-11 en el sector de espumas de poliuretano (toneladas PAO)	14.143	13.830	11.666	9.646	7.164	3.821	3.553	102	0	
Objetivos anuales de eliminación de CFC-11 en el sector de espumas de poliuretano (toneladas PAO)	2.000	2.500	2.500	2.500	600	551				10.651
Financiamiento anual total ($EUA X 1.000)	9.940	12.570	10.903	10.903	3.320	2.676	1.767	1.767		53.846
Costos de apoyo del programa ($EUA X 1.000)	886,6	1.115,3	961,27	961,27	282,8	240,84	159,03	159,03		4.766,14
Costo total al Fondo Multilateral ($EUA X 1.000)	**10.826,6**	**13.685,3**	**11.864,27**	**11.864,27**	**3.602,8**	**2.916,84**	**1.926,03**	**1.926,03**		**58.612,14**

4. La liberación de los fondos está sujeta a lo siguiente:

a) Confirmación de que:

i) se lograron todos los objetivos de eliminación y límites de consumo establecidos para el año anterior;

ii) se verificó que las actividades previstas para el año anterior se emprendieron de acuerdo con el programa de ejecución anual;

iii) se firmaron los contratos de eliminación gradual de CFC, ascendiendo por lo menos al 50% de los objetivos de los contratos del año en curso y a 100% de los objetivos de los contratos del año anterior.

b) Confirmación del cumplimiento mediante la verificación por inspección *in situ* de un mínimo del 15% de las actividades de conversión, correspondiente a un mínimo del 15% del consumo de CFC del programa de ejecución anual;

c) Las cifras de consumo proporcionadas según los términos del acuerdo son coherentes con los informes dados por China a la Secretaría del Ozono, en virtud del Artículo 7 del Protocolo de Montreal.

5. La condición en el párrafo 4 a) anterior especifica que todos los objetivos de eliminación gradual y los límites de consumo que hayan sido convenidos para el año anterior deben lograrse. Los objetivos de eliminación gradual y los límites de consumo convenidos son:

a) Límite de consumo nacional anual de CFC-11 (toneladas PAO)

b) Límite de consumo anual de CFC-11 en el sector de espumas de poliuretano (toneladas PAO)

c) Objetivos anuales de eliminación gradual de CFC-11 en el sector de espumas de poliuretano (toneladas PAO)

Los límites se precisan en la Tabla 1 anterior.

6. Además, la Decisión 41/42 del Comité Ejecutivo solicitó al Banco Mundial, como cuestión prioritaria, implantar un sistema de verificación satisfactorio del CFC eliminado con los proyectos en curso y nuevos en el sector de espumas de poliuretano, y del consumo anual de CFC en el sector, en el año 2003 y posteriores. Esta petición se relaciona con el párrafo antedicho 5, b) y c).

Informe sobre la puesta en ejecución de los programas anuales de 2003 y 2004

7. La propuesta original del Banco Mundial incluyó dos informes: el Informe de la misión de verificación del programa anual de 2004 del sector de espumas, y el programa anual de 2005 - eliminación de CFC-11 en el sector de espumas de poliuretano en China. Posteriormente se complementó con el Informe sumario de 2003 de la verificación del Banco Mundial para el sector de espumas de poliuretano en China.

a) El Informe de la misión de verificación del programa anual de 2004 del sector de

espumas describió los resultados de visitas a una muestra de empresas que convertirán sus tecnologías, y la verificación de su admisibilidad. El tamaño de muestra mínimo se definió en el acuerdo del plan sectorial.

b) El programa anual contiene un Informe de situación de la ejecución correspondiente al período de 2002 a 2004, no sólo describe los criterios y medidas gubernamentales, las actividades de las empresas y la asistencia técnica del año anterior, sino también contiene tablas con datos, como el estado de ejecución de las actividades y de los proyectos de la empresa, la información sobre la verificación recopilada, y listas de las actividades de asistencia técnica.

c) El Informe sumario de verificación se relaciona con la Decisión 41/42. Brinda la información sobre la verificación en el sector de producción y los datos relacionados. De acuerdo con esos datos, se propone una metodología para establecer el consumo nacional CFC-11 en el sector de espumas. Además, el informe da datos sobre la importación y la exportación de CFC-11, y el consumo en otros sectores.

8. El Banco Mundial proporcionó datos globales al nivel de las empresas sobre el estado de los proyectos, en términos de la eliminación gradual esperada y lograda. Los datos incluyen datos agregados a un nivel de grupo, empezando con el programa anual de 2002.

9. Se iniciaron seis actividades de asistencia técnica bajo el programa de ejecución de 2003, de las cuales dos ya se terminaron. Para 2004, se planificaron 6 actividades, de las cuales una (auditoría de cumplimiento) ya se terminó.

Programa de ejecución anual de 2005

10. En virtud del programa anual de 2005, se planifica la aprobación de 10.903 $EUA millones para China con 961.270 $EUA para el Banco Mundial como costos de apoyo. China debe cumplir con un límite de consumo nacional de 10.400 toneladas PAO de CFC-11, con un límite de consumo del sector de espumas de poliuretano de 9.646 toneladas PAO y un objetivo de eliminación gradual de 2.500 toneladas PAO en el sector de espumas de poliuretano

11. Las actividades del programa anual de 2005 incluyen criterios y medidas gubernamentales, actividades de las empresas y asistencia técnica. Los criterios y medidas gubernamentales se concentrarán en seis actividades principales que se consideren necesarias para eliminar el CFC-11 en China. Similar a lo que se observó en el último programa anual, hay criterios y medidas de control que han estado en vigor desde hace años y que seguirán aplicándose o haciéndose más eficaces. Éstos incluyen la aplicación de una interdicción en la nueva construcción de instalaciones de producción de espumas con CFC-11, control de la producción de CFC-11, y restricciones a la exportación e importación de SAO. Además, el gobierno propone invertir en el desarrollo de sucedáneos y en el fortalecimiento institucional.

12. A nivel de las empresas, SEPA identificará las empresas de espuma de poliuretano para cumplir el objetivo de eliminación gradual de 2.500 toneladas. Esto se lograría mediante la identificación por parte de SEPA de cinco a seis proyectos regionales grandes. Se espera firmar

un mínimo del 50% de los contratos de reducción de CFC-11 para mediados de 2005 y el otro 50% para fines de 2005.

13. Se prevén seis actividades de asistencia técnica, que incluyen la auditoría de cumplimiento de 2004, la capacitación del personal implicado en la ejecución de las actividades de eliminación gradual, y la fase III de la formulación y revisión de normas. Las actividades de asistencia técnica incluyen la auditoría de cumplimiento de 2004, bajo la cual se planifica la capacitación de auditores para el segundo trimestre de 2005, después de convenidas las atribuciones en el primer trimestre.

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

14. El Banco Mundial, en nombre de China, informó a la Secretaría del Fondo el consumo de CFC-11 de 2003 de 13.994 toneladas, de las cuales 11.423 toneladas PAO se consumieron en el sector de espumas de 2003. Estas cifras de consumo están dentro de los límites de consumo nacionales y del sector de espumas, 15.500 toneladas PAO y 13.830 toneladas PAO, convenidas por China.

15. Debería observarse que China decidió dividir los diversos sectores de producción y de consumo en acuerdos separados, a pesar de tener la oportunidad de considerar la combinación de todas las actividades relacionadas con el consumo de CFC en un acuerdo nacional de eliminación gradual. Esta división hace que la supervisión, la presentación de la información y la verificación del acuerdo sea un mayor desafío de lo que sería si hubiera un plan nacional de eliminación. Además, China decidió seleccionar a varios organismos de ejecución para aplicar estos acuerdos. En estas circunstancias, para asegurar la transparencia y la rendición de cuentas es inevitable que se deben pedir a los diversos sectores datos específicos del sector sobre su consumo de SAO y los efectos de eliminación gradual en el sector pertinente.

16. Los párrafos siguientes muestran detalladamente los datos pedidos por el Comité Ejecutivo y los datos entregados por el Banco Mundial y China.

17. El Banco Mundial proporcionó el "Informe sumario de verificación de 2003 del Banco Mundial para el sector de espumas de poliuretano de China". Para calcular el consumo de CFC-11 en China, el Banco Mundial sugiere un sistema basado en la verificación de la producción de CFC-11 a partir del acuerdo del sector de producción. Además el Banco Mundial da las cifras de importación y exportación de CFC-11, según lo informado por la Oficina de Importación/Exportación de SAO de SEPA. Estas cifras se indican en la Tabla 2:

Tabla 2: Consumo total nacional de CFC-11 en 2003

Año 2003	Producción/consumo de CFC-11 en los acuerdos	Producción real/ datos de consumo	Verificación
Producción de CFC-11	N/C	13.828,4	Verificado por el Banco Mundial
Importaciones de CFC-11	N/C	661,6	Administrado bajo el sistema de otorgamiento de licencias de importación/exportación *
Exportaciones de CFC-11	N/C	495,7	Administrado por el sistema de otorgamiento de licencias de importación/exportación *
Consumo nacional de CFC-11		**13.994,3**	**Consumo según lo definido por el Protocolo de Montreal**

* Administrado por la Oficina de Importación/Exportación de SAO

18. Según lo mencionado anteriormente, el límite de consumo nacional anual de CFC-11 para China era 15.500 toneladas PAO para 2003. Al informar un consumo de 13.994,3 toneladas PAO, China satisfizo la condición del acuerdo. No se ha pedido a China que dé la verificación de las cifras de consumo nacional de CFC-11. Si la verificación del sector de consumo se basara en los datos de consumo de CFC-11, la verificación de las cifras de importación y exportación se convertirían en una necesidad.

19. Se informó que el consumo anual CFC-11 en el sector de espumas de poliuretano es 11.423.48 toneladas PAO. El Banco Mundial proporcionó, por requerimiento, los datos que aparecen en la Tabla 3.

Tabla 3: Consumo nacional de CFC-11 en 2003, por sectores

Consumo sectorial de CFC-11			Consumo de CFC-11 (toneladas)		Comentarios
			Objetivo	Realidad	
Consumo de CFC-11 (datos sobre abastecimiento, calculados a partir de la producción, exportación, e importación)				**13.994**	
Varios sectores	Sector del tabaco		700	620	Informado por China. Aceptado por el Comité Ejecutivo y financiamiento liberado en la 43a. Reunión
	Aerosoles		N/c	279	Consumo identificado como parte de la preparación del plan del sector farmacéutico de aerosoles
	Refrigeración doméstica, industrial y comercial		N/c	1.325	Según el examen y la presentación de la información de China
	CFC-11 usado para mantenimiento		N/c	347	
Sector de espumas de poliuretano	***Consumo CFC-11 en el sector de espumas de poliuretano*** *(diferencia entre abastecimiento y consumo de otros sectores)*		***11.666***	***11.423***	
	Alícuota de subsectores dentro del sector de espumas	Consumo CFC-11 por proyecto en curso del sector de espumas de poliuretano	N/c	1.280	Según Informe sobre la marcha de las actividades dado al Fondo Multilateral
		Consumo CFC-11 de las compañías no financiadas por el proyecto sectorial de espumas de poliuretano	N/c	1.859	Según el acuerdo, China es responsable de eliminar el consumo de las empresas no admisibles para el financiamiento en virtud del proyecto del sector de espumas de poliuretano
		Sector de espumas de poliuretano; consumo de 2003 capturado por los contratos de 2001 y 2002	N/c	1.771	
		Sector de espumas de poliuretano todavía irresuelto	N/c	6.513	Consumo de las compañías de espumas de poliuretano admisibles

20. Con este sistema de datos, el Banco Mundial dividió los datos conocidos del consumo para el país en un número de sectores y subsectores. Este enfoque calcula, pero no verifica, el

consumo de espumas a partir del nivel macro deduciendo del consumo nacional conocido los datos del consumo para los sectores. El enfoque daría el resultado deseado si se verificaran los datos sobre la exportación y la importación y los datos referentes a los sectores de espumas sin poliuretano fueran altamente confiables.

21. El acuerdo del sector de espumas prescribe un límite anual de consumo de CFC-11 en el sector de espumas de poliuretano de 13.830 toneladas PAO. China informó 11.423 toneladas PAO del consumo, en conformidad con los límites del acuerdo. La Decisión 41/42 pide que se verifique esta cifra. El Banco Mundial no dio ninguna verificación de los datos y no propone ningún método para verificarlos.

22. El acuerdo del sector de espumas incluye un objetivo anual de eliminación gradual de CFC-11 en el sector de espumas de poliuretano, convenido para 2003, de 2.500 toneladas PAO. La Decisión 41/42 requiere la verificación de este objetivo. La presentación de la información del Banco Mundial relacionada con este objetivo está muy conectada con la presentación de la información de otro objetivo, a saber: la firma de contratos de eliminación gradual de CFC conforme a los objetivos. El Acuerdo especifica para este último objetivo que los contratos de eliminación gradual de CFC tienen que firmarse con por lo menos el 50% de los objetivos de contratos del año en curso y el 100% de los objetivos de contratos del año anterior.

23. El Banco Mundial suministró datos sobre el estado actual de los contratos en el Anexo 1 del informe, pero no hizo una comparación entre los objetivos y los contratos reales. La Secretaría realizó la comparación y obtuvo los resultados que aparecen en la Tabla 4 siguiente.

24. Se presentó un método de verificación de los objetivos anuales de eliminación de CFC-11 en el sector de espumas de poliuretano, y no es evidente que se haya realizado la verificación solicitada. Debería observarse, sin embargo, que algunos de los datos que podrían formar un componente de una verificación ya están disponibles para el Banco Mundial; el Banco Mundial proporcionó, como lo requiere el Acuerdo con el Comité Ejecutivo, la confirmación del cumplimiento con la verificación *in situ* de cierto porcentaje de las empresas implicadas. La Secretaría planteó la cuestión de que el Banco Mundial podría explorar cómo utilizar estos datos verificados para verificar el objetivo de eliminación gradual del sector. El Banco Mundial deliberó con la Secretaría sobre las características del sistema de supervisión en China y el nivel de fiabilidad que genera, pero en el momento de preparar este documento, no se había recibido información por escrito.

25. El acuerdo del sector de espumas prescribe una eliminación gradual anual mínima de 2.500 toneladas PAO. China informó 2.721.3 toneladas PAO de consumo, en conformidad con los límites del acuerdo, pero sin suministrar la verificación solicitada por la Decisión 41/42. El objetivo de firmar por lo menos el 50% de los objetivos de contratos del año en curso y el 100% de los objetivos de los contratos del año anterior se satisfizo.

26. El acuerdo especifica que la verificación tiene que presentarse sobre el hecho de que las actividades previstas para el año anterior se emprendieron conforme con el programa de ejecución anual. En gran medida, los datos relacionados con esa petición pueden encontrarse en los informes proporcionados. Las actividades de asistencia técnica están bien documentadas. Sin embargo, el Banco Mundial no proporcionó una comparación entre las actividades previstas y las

actividades emprendidas, y no se dio ninguna explicación con respecto a la verificación de actividades.

Tabla 4: Comparación entre contratos firmados y objetivos

Objetivo de eliminación (toneladas)	Nombre del proyecto	Programa anual	Fecha del contrato	Consumo de CFC- 11 (toneladas)	Diferencia objetivo/realidad (toneladas)
	Lanzhou Huayu	2003	9 de enero, 2003	1075,44	
	Shaoxingshi Weike		9 de enero, 2003	997,75	
	Nantong Xinyuan		9 de enero, 2003	648,11	
2.500	**Total 2003**			**2.721,3**	**221,3**
	Dalian Yuji	De enero a junio de 2004; real	19 de marzo 04	303,9	
	Fenghua Yongxing		5 de abril de 04	484	
	Beijing Zhonghai		9 de abril de 04	599,8	
1.250	**Total de la primera mitad de 2004**			**1.387,7**	**137,7**
	Hejian Hongda	De julio a diciembre 2004; previsto	No firmado todavía	399,7	
	Ningbo Lantian		No firmado todavía	226,11	
	Shangai Jinyuanyuhua		No firmado todavía	1400	
2.500	**Total previsto de 2004**			**3.413,51**	**913,51**

27. La parte relacionada del Acuerdo especifica que se requiere una confirmación del cumplimiento mediante la verificación por la inspección del sitio de un mínimo del 15% de las

actividades de conversión correspondientes a un mínimo del 15% del consumo de CFC del programa de ejecución anual.

28. El Banco Mundial da suficientes detalles de la verificación en el Informe sumario de la verificación del Banco Mundial para el sector de espumas de poliuretano de China; pero el informe no contiene la información sobre la metodología para seleccionar la empresa ni el nombre y la afiliación de la persona o de la compañía que hace la verificación. Por requerimiento de la Secretaría el Banco Mundial informó que la verificación había sido realizada por un experto independiente especializado en espumas junto con un equipo del Banco Mundial.

29. La Secretaría encontró que los datos verificados no eran coherentes. Antes de terminar este documento, seguían sin resolverse las cuestiones relacionadas a esto.

30. El Acuerdo especifica que las cifras de consumo proporcionadas conforme al Acuerdo tienen que ser coherentes con los informes de China a la Secretaría del Ozono en virtud del Artículo 7 del Protocolo de Montreal.

31. Si bien los formularios de la Secretaría del Ozono para presentar la información conforme al Artículo 7 requieren la presentación de dicha información por sustancia, la Secretaría del Ozono publica los datos únicamente a un nivel agregado por grupo. Por lo tanto, los datos relacionados específicamente con el consumo CFC-11 en China tienen que ser proporcionados por el Banco Mundial, en nombre de China, como parte de su presentación de la información. El Banco Mundial no proporcionó una comparación entre los datos informados según los términos del Acuerdo del sector de espumas de China y los datos informados en virtud del Artículo 7. Si bien la Secretaría del Fondo no tiene ninguna razón para creer que hay diferencia entre ambos, es necesario dar a conocer las cifras para demostrar que son coherentes.

32. El informe recibido este año del Banco Mundial no satisfizo totalmente los requisitos del acuerdo ni los de la Decisión 41/42 ulterior. Se informó el consumo anual nacional de CFC-11 y está disponible, pero no se ha verificado. Se informó el consumo en el sector de espumas y el logro de los objetivos de eliminación gradual, pero tampoco ha sido verificado. El cumplimiento de los requisitos restantes se podía deducir de la información provista o disponible. Sigue habiendo algunas cuestiones adicionales por resolverse.

33. China preparó un plan acelerado de eliminación gradual para la producción y el consumo de CFC. Este plan contiene una propuesta para acelerar la ejecución del plan sectorial de espumas y abordar las empresas de espumas restantes en los programas anuales entre 2004 a 2006. No se mencionó esta cuestión en el programa de ejecución anual de 2005.

34. El programa de ejecución anual de 2005 del sector de espumas de poliuretano de China y el Estado de ejecución del programa anual de 2004 se adjuntan a este documento. La cantidad de 10.903.000 $EUA y los costos de apoyo asociados de 961.270 $EUA que se solicitan para ejecutar el programa anual de 2005 son coherentes con el Acuerdo.

RECOMENDACIÓN

35. El Comité Ejecutivo puede querer considerar las opciones siguientes:

a) Aplazar la aprobación de la parte del financiamiento hasta que se establezcan eventualmente las modalidades de auditoría y se hayan provisto las auditorías pertinentes para 2003/2004; o

b) Aprobar la parte del financiamiento según lo indicado en el párrafo 34 con retención del desembolso hasta que se satisfagan las mismas condiciones dadas en la opción a) anterior.

HOJA DE EVALUACIÓN DE PROYECTO - PROYECTOS PLURIANUALES
CHINA

TÍTULO DEL PROYECTO	ORGANISMO BILATERAL/ORGANISMO DE EJECUCIÓN
Eliminación gradual nacional del metilbromuro (segunda fase)	ONUDI (Organismo director), Italia (Organismo cooperante)

ORGANISMO DE COORDINACIÓN NACIONAL:	SEPA

DATOS DE CONSUMO MÁS RECIENTE PARA SAO OBJETO DEL PROYECTO

A: DATOS DEL ARTÍCULO 7 (TONELADAS PAO, 2003, A OCTUBRE DE 2004)

Anexo E, metilbromuro	1.008,00		

B: DATOS SECTORIALES DEL PROGRAMA DE PAÍS (TONELADAS PAO, 2003, A OCTUBRE 2004)

SAO	Espumas	Ref.	Aero-soles	SAO	Solventes	Agentes de procesos	Fumigantes
				Metilbromuro			1.008,0

Consumo de CFC remanente admisible para la financiación (toneladas PAO)	n/c

PLAN ADMINISTRATIVO DEL AÑO EN CURSO: Financiación total 0 $EUA Eliminación total 0 ton. PAO.

DATOS DEL PROYECTO	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Límites del Protocolo de Montreal	1.102,1	1.102,1	881,7	881,7	881,7	881,7	881,7	881,7	881,7	881,7	881,7	881,7	0	
Límites de consumo anual	1.087,8	1.087,8	880,0	723,8	570,6	390,0	250,0	209,0	176,0	150,0	100,0	50,0	0	
Eliminación anual con proyectos en curso														
Eliminación anual nueva abordada por la ONUDI	0	0	207,8	156,2	65,2	124,6	0	0	0	0	0	0	0	553,8
Eliminación anual nueva abordada por Italia	0	0	0	0	88,0	56,0	140,0	41,0	33,0	26,0	50,0	50,0	50,0	534,0
Consumo total de SAO a eliminar	0	0	207,8	156,2	153,2	180,6	140,0	41,0	33,0	26,0	50,0	50,0	0	1.087,8
Consumo total de SAO a agregar (HCFC)														n/c
Costo del proyecto según propuesta original ($EUA)	4.086.600	0	900.000	2.200.000	2.100.000	1.800.000	1.300.000	600.000	500.000	500.000	500.000	302.742		17.873.391
Costos finales del proyecto ($EUA):														
Financiación para la ONUDI	4.086.600	0	0	0	1.605.405	1.800.000	1.300.000	600.000	500.000	500.000	500.000	302.742	0	11.194.747
Financiación para Italia	0	0	900.000	2.200.000	494.595	0	0	0	0	0	0	0	0	3.594.595
Financiación total del proyecto	4.086.600	0	900.000	2.200.000	2.100.000	1.800.000	1.300.000	600.000	500.000	500.000	500.000	302.742	0	14.789.342
Costos de apoyo finales ($EUA)														
Costos de apoyo para la ONUDI	306.495	0	0	0	120.405	135.000	97.500	45.000	37.500	37.500	37.500	22.706	0	839.606
Costos de apoyo para Italia	0	0	109.000	242.000	54.405	0	0	0	0	0	0	0	0	405.405
Total de costos de apoyo	306.495	0	109.000	242.000	174.810	135.000	97.500	45.000	37.500	37.500	37.500	22.706	0	1.245.012
Costo total al Fondo Multilateral ($EUA)	4.393.095 *	0	1.009.000	2.274.810	2.274.810	1.935.000	1.397.500	645.000	537.500	537.500	537.500	325.448	0	16.034.354
Relación de costo a eficacia final del proyecto ($EUA/kg)														13,61

* Financiación aprobada en la 41ª Reunión del Comité Ejecutivo

RECOMENDACIÓN DE LA SECRETARÍA	Para consideración individual

DESCRIPCIÓN DEL PROYECTO

Antecedentes

36. La ONUDI, en nombre del gobierno de China, presenta un plan nacional para la eliminación gradual del metilbromuro en el sector de consumo a la consideración del Comité Ejecutivo en su 44a. Reunión. El proyecto tiene por finalidad eliminar 1.087.8 toneladas PAO de metilbromuro a un costo total al Fondo Multilateral de 17.873.391 $EUA, que incluye 4.086.600 $EUA ya aprobados en la 41a. Reunión. El proyecto será puesto en ejecución por la ONUDI (como organismo de ejecución principal) y el gobierno de Italia (como organismo de ejecución cooperante). El gobierno de China deberá proporcionar la suma de 5.412.889 $EUA adicionales como contribución de la contraparte.

37. La base para la producción y el consumo del metilbromuro en China es 776,3 toneladas PAO y 1.101,6 toneladas PAO, respectivamente. El examen realizado durante la preparación del plan de eliminación gradual del metilbromuro dio los resultados siguientes:

Descripción	**Toneladas PAO**		
	2000	**2001**	**2002**
Producción	1.438,2	1.391,4	2.135,4
Importaciones	1.290,0	858,6	813,0
Exportaciones	628,2	609,6	900,0
Consumo incluyendo usos para cuarentena y preembarque y materia prima	2.100,0	1.640,4	2.048,4
Usos para cuarentena y preembarque y materia prima	(480,0)	(644,4)	(960,6)
Consumo exceptuado los usos para cuarentena y preembarque y materia prima	1.620,0	996,0	1.087,8

38. Tres compañías producen metilbromuro en China, a saber: Lianyugang Seawater Chemical Plant[1], Zhejiang Linhai Jianxin Chemical Corporation y Shandong Changyi Chemical Plant. La producción real de las tres plantas es alrededor de 40 por ciento de la capacidad instalada, según lo indicado en la tabla siguiente:

Planta de producción	**Toneladas PAO**		
	Capacidad instalada	**Producción**	**Metilbromuro vendido**
Lianyungang Deadsea Bromide Co	3.000	1.549	1.613
Linhai Jianxin Chemical Co.	1.500	497	497
Changyi Chemical Plant	540	89	104
Total	5.040	2.135	2.215

[1] En 1996, la compañía multinacional Deadsea Bromine compró 60 por ciento de la planta Lianyugang Seawater Chemical Plant y cambió el nombre de la empresa a Lianyungang Deadsea Bromide Corporation.

39. La base de la producción del metilbromuro es 776,.3 toneladas PAO. Los niveles de producción, tal como han sido informados por el gobierno de China a la Secretaría del Ozono en virtud del Artículo 7, aparecen en la tabla siguiente:

Año	Producción de PAO	Año	Producción de PAO
		1999	876,0
1995	171,0	2000	1438,2
1996	660,0	2001	1391,4
1997	876,0	2002	744,0
1998	1398,0	2003	558,4

40. En nombre del gobierno de China, la ONUDI presentó un plan nacional de eliminación gradual del metilbromuro a la consideración del Comité Ejecutivo en su 41a. Reunión. El costo total del proyecto, tal como se presentó, sobrepasó los 40 $EUA millones (UNEP/OzL.Pro/ExCom/41/28 y Corr.1). Sin embargo, el gobierno solicitó sólo el financiamiento (17,2 $EUA millones) para reducir su producción del metilbromuro en 45,4 toneladas PAO y su consumo de esa sustancia en 389,0 toneladas PAO con el fin de alcanzar los límites de producción y consumo de 2005 del Protocolo de Montreal.

41. Después de considerar la propuesta de proyecto, el Comité Ejecutivo decidió aprobar 4.086.600 $EUA más los costos de apoyo del organismo de 306.495 $EUA, para que la ONUDI elimine 389,2 toneladas PAO de metilbromuro en el sector de consumo. El Comité Ejecutivo también solicitó a la ONUDI que asistiera al gobierno de China a terminar una propuesta de proyecto para la eliminación gradual de todos los usos controlados del metilbromuro, para presentar al Comité Ejecutivo (Decisión 41/46).

42. Conforme a la división del párrafo c de la Decisión 41/46, en su 43a. Reunión, el Comité Ejecutivo aprobó la actividad de la preparación del proyecto, puesta en ejecución por la ONUDI (20.000 $EUA) para terminar el plan nacional de eliminación gradual del metilbromuro en el sector de consumo en China. Asimismo en su 43a. Reunión, el Comité Ejecutivo autorizó a la Secretaría a realizar la auditoría técnica de la producción del metilbromuro que incluiría la recopilación de datos de producción de metilbromuro para usos controlados y de cuarentena y preembarque (Decisión 43/43(b)).

Consumo de metilbromuro en China

43. En China el metilbromuro se utilizó inicialmente sólo para los usos de cuarentena y preembarque. Sin embargo, en los últimos años el sector agrícola del país se ha ampliado y se introdujeron cultivos nuevos, lo que dio por resultado un aumento del uso de metilbromuro. Actualmente, el metilbromuro se utiliza en la fumigación de suelos para la producción de fresas, pepinos, tomates, berenjenas, pimientos picantes, flores y tabaco, y para la fumigación de productos básicos. El consumo del metilbromuro por cultivo/uso se presenta en la tabla siguiente:

Cultivo/uso	**Área (ha)**	**Metilbromuto(ton. PAO)**
Fresas	1.297	312,0
Pepinos	99	24,0
Tomates	400	96,0
Berenjenas	148	36,0
Pimientos picantes	149	36,0
Flores	149	30,0
Tabaco	250.994	427,8
Productos básicos		126,0
Total	**253.236**	**1.087,8**

Estrategia de eliminación gradual

44. La estrategia para eliminar el consumo de metilbromuro se basará en los siguientes principios:

a) Hacer cumplir las restricciones de producción e importación con un sistema de cuotas de importación y de producción para cumplir con la reducción de consumo de 2005;

b) Otorgar licencias para los usos de cuarentena y preembarque, para controlar esos usos;

c) Controlar el consumo del metilbromuro en el subsector de tabaco con la ayuda de la Administración Estatal del Monopolio del Tabaco, y en la fumigación de productos básicos, con la ayuda de la Oficina Estatal de Reserva de Granos;

d) Poner en ejecución los programas de capacitación para transferir las tecnologías alternativas necesarias a todos los usuarios de metilbromuro;

e) Eliminar gradualmente el metilbromuro de manera comprobable a nivel del país, de la provincia y del cultivador;

f) Dar prioridad a los cultivos/usos siguiente para los cuales ya se usan tecnologías alternativas: almácigos de tabaco (50.000 cultivadores ya utilizan la tecnología de bandejas flotantes) y fumigación de los productos básicos (ya se usan más de 4.000 toneladas de fosfina).

45. De acuerdo con los principios antedichos, el gobierno de China propone eliminar totalmente el metilbromuro antes de 2015, según el programa de eliminación gradual presentado en la tabla siguiente:

Cultivo/uso	Toneladas PAO											
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fresas	312,0	312,0	312,0	272,0	242,0	128,0	100,0	80,0	60,0	40,0	20,0	0,0
Pepinos	24,0	24,0	24,0	12,0	6,0	0,0						0,0
Tomates	96,0	96,0	96,0	60,0	40,0	20,0	20,0	20,0	20,0	10,0	10,0	0,0
Berenjenas	36,0	36,0	36,0	36,0	36,0	36,0	36,0	36,0	36,0	20,0	10,0	0,0
Pimientos picantes	36,0	36,0	36,0	36,0	36,0	36,0	28,0	20,0	14,0	10,0	0,0	0,0
Flores	30,0	30,0	30,0	30,0	30,0	30,0	25,0	20,0	20,0	20,0	10,0	0,0
Tabaco	427,8	300,0	164,6	124,6	0,0							0,0
Productos básicos	126,0	46,0	25,2	0,0								0,0
Consumo total	1.087,8	880,0	723,8	570,6	390,0	250,0	209,0	176,0	150,0	100,0	50,0	0,0
Eliminación gradual	0,0	207,8	156,2	153,2	180,6	140,0	41,0	33,0	26,0	50,0	50,0	50,0

Tecnologías alternativas y costos

46. Las tecnologías alternativas al metilbromuro propuestas por cultivo/uso se presentan en la tabla siguiente:

Cultivo/uso	Tecnologías alternativas al metilbromuro
Fresas	Metam-sodio inyectado en los suelos
Pepinos	Injerto
Tomates	Metam-sodio inyectado en los suelos
Berenjenas	Sistema de bandejas flotantes en microtúneles
Pimientos picantes	Metam-sodio inyectado en los suelos
Tabaco	Sistema de bandejas flotantes
Flores	Esterilización
Productos básicos	Fosfina (tabletas o gránulos)

47. El plan de eliminación gradual también incluye programas de capacitación.

48. El costo total del plan nacional de eliminación del metilbromuro es 23.286.281 $EUA. De esta cantidad, 5.412.889 $EUA provienen del gobierno de China como financiamiento de la contraparte. Por lo tanto, la cantidad solicitada del Fondo Multilateral es 17.873.392 $EUA, distribuidos de la manera siguiente:

Cultivo/uso	Toneladas PAO	$EUA				
		Capital	Funciona-miento	Capacitación	Imprevistos	Total
Fresas	312,0	1.642.476	757.531	1.733.780	337.626	4.471.413
Pepinos	24,0	35.860	(41,323)	138.441	17.430	150.408
Tomates	96,0	541.477	429.993	571.577	111.305	1.654.352
Berenjenas	36,0	44.027	(46,915)	213.885	25.791	236.788
Pimientos picantes	36,0	199.318	179.113	210.397	40.972	629.800
Flores	30,0	1.060.000	213.279	216.998	127.700	1.617.977
Tabaco	427,8	38.318.584	(29,939,318)	774.301	3.909.289	13.062.856
Productos básicos	126,0	1.013.030	26.880	292.250	130.528	1.462.688
Total	1.087,8	42.854.772	(28,420,760)	4.151.629	4.700.640	23.286.281
Contribución de China						(5.412.889)
Total general (*)	1.087,8					17.873.392

(*) Incluye 4.086.600 $EUA aprobado en la 41a. Reunión del Comité Ejecutivo.

49. La duración estimada para la ejecución del proyecto es 11 años (2004-2015).

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

50. En su examen del plan nacional de eliminación gradual del metilbromuro en China, la Secretaría observó que, en la propuesta de proyecto presentada a la 44a. Reunión del Comité Ejecutivo, la ONUDI había considerado algunos de los comentarios planteados por la Secretaría cuando el proyecto se presentó en la 41a. Reunión. Sin embargo, otros comentarios no parecían haber sido tratados. Por lo tanto, la Secretaría planteó los siguientes comentarios adicionales sobre la propuesta para que la ONUDI los considerara. Las respuestas recibidas de la ONUDI aparecen a continuación.

Cuestiones relacionadas con el proyecto

51. La Secretaría y la ONUDI deliberaron sobre lo siguiente: los índices de uso del metilbromuro que aparecen en la propuesta para diversos cultivos eran más altos que los índices de dosificación utilizados para los mismos cultivos en otros países; las altas cantidades de productos químicos usados en el injerto de pepinos y berenjenas, comparado con las cantidades usadas cuando estos cultivos se cultivan en invernaderos con metilbromuro aplicado como fumigante; y las cuestiones de costos asociados con los productos químicos alternativos, la capacitación y la mano de obra. Todas estas cuestiones fueron tratadas y luego explicadas por la ONUDI de la manera siguiente: se utilizaron índices más bajos de dosificación de fumigantes alternativos para ciertos cultivos al calcular los costos de explotación adicionales; el precio del metam-sodio (que localmente se produce en China), usado para calcular los costos de explotación, se redujo casi en 0,15 $EUA/l; las calderas solicitadas para la tecnología de vapor para el sector de flores (que también incluye el ginseng) y la parte de los costos de las máquinas de inyección para el uso de metam-sodio serán pagadas por los granjeros.

52. La Secretaría también planteo y trató cuestiones relacionadas con la eliminación gradual del metilbromuro en el sector del tabaco, puesto que éste representa más del 56 por ciento del costo total del proyecto. Específicamente, esas cuestiones fueron: el alto costo de las bandejas (0,82 $EUA/unidad) comparado con las bandejas usadas en proyectos similares aprobados (es decir, el precio real de bandejas en Argentina es 0,72 $EUA); la justificación para la construcción de invernaderos muy costosos para plantas de semillero cultivadas en áreas de más de 30 has (215,26 $EUA/ha) en lugar de usar microtúneles, que son más baratos (125,84 $EUA/ha); el uso de tubos de PVC en lugar de arcos de acero galvanizados para la construcción de los microtúneles; y la gran diferencia de precio entre las semillas comunes (1.520 $EUA/ha) y las semillas granuladas (11.438 $EUA/ha). La ONUDI indicó que la cuestión había sido tratada más a fondo con el gobierno de China y se convino que la producción de todas las plantas de semillero de tabaco se basaría en microtúneles. La gestión de una gran cantidad de microtúneles es complicada e incierta; al respecto, China informaría inmediatamente a la Secretaría sobre cualquier problema que pudiera surgir de la operación de una gran cantidad de microtúneles en un área pequeña. Además, también se convino que los granjeros

proporcionarían algunos materiales de construcción (bloques y arcos), y que se utilizaría una sembradora más barata que parece funcionar muy bien. Los costos del proyecto se ajustaron en consecuencia.

53. La ONUDI también informó a la Secretaría que el gobierno de China acordó proporcionar, sin cargo alguno, el personal agrícola que participe en los programas de capacitación asociados a la eliminación gradual del metilbromuro en los diversos cultivos y usos. El costo revisado del programa de capacitación es 1.620.130 $EUA.

Financiamiento convenido

54. De acuerdo con las cuestiones planteadas por la Secretaría y otras deliberaciones mantenidas entre la ONUDI y las partes interesadas importantes de China, la ONUDI reajustó algunos de los componentes del proyecto, lo que resultó en una reducción de los costos del proyecto. El costo total revisado del proyecto es 14.789.342 $EUA, que incluye 4.086.600 $EUA ya aprobados en la 41a. Reunión del Comité Ejecutivo. El gobierno de China proporcionaría una suma de $5.412.889 adicionales como contribución de contraparte.

55. El costo del proyecto revisado por cultivo y uso, se resume en la tabla siguiente:

Cultivo/uso	Ton. PAO	$EUA					
		Capital	Explotación	Capacitación	Imprevistos	Gestión	Total
Fresas	312,0	1.642.476	151.745	349.000	199.148	22.500	2.364.869
Pepinos	24,0	35.860	(41,323)	38.843	7.470	15.000	55.850
Tomates	96,0	317.200	253.394	100.427	41.763	56.250	769.034
Berenjenas	36,0	44.027	(46,915)	40.016	8.404	22.500	68.032
Pimientos picantes	36,0	199.318	89.774	40.016	23.933	37.500	390.541
Flores	30,0	304.640	61.233	70.128	37.477	82.500	555.978
Tabaco	427,8	25.098.647	(19,608,307)	800.200	2.589.885	273.750	9.154.175
Productos básicos	126,0	1.013.030	26.880	181.500	119.453	90.000	1.430.863
Total	1.087,8	28.655.198	(19,113,519)	1.620.130	3.027.533	600.000	14.789.342

56. La relación de costo a eficacia del plan de eliminación gradual es 13,61 $EUA/kg. El gobierno de China tendría flexibilidad al utilizar los recursos disponibles para la eliminación gradual del metilbromuro en cualquier cultivo o uso que juzgue más apropiados.

Acuerdo

57. En el momento de elaborar este documento, el gobierno de China y el gobierno de Italia (como organismo de ejecución cooperante) estaban por firmar un Memorando de entendimiento sobre cooperación en el plan nacional de eliminación para el metilbromuro en ese país. Se informó a la Secretaría que dicho Memorando se firmará a principios de noviembre de 2004 y que el proyecto de acuerdo entre el gobierno de China y el Comité Ejecutivo para la eliminación completa de las sustancias del Anexo E (consumo) se terminará al mismo tiempo. Una vez que lo reciba, la Secretaría examinará el proyecto de acuerdo y aconsejará al Comité Ejecutivo en consecuencia, antes de la 44a. Reunión, conforme con los requisitos de la Decisión 41/80.

RECOMENDACIÓN

58. Pendiente.

PLAN SECTORIAL PARA LA ELIMINACIÓN GRADUAL DE HALONES: PROGRAMA ANUAL DE 2005

DESCRIPCIÓN DEL PROYECTO

59. De acuerdo con la aprobación del Comité Ejecutivo del plan sectorial para la eliminación de halones en China (Decisión 23/11), ese país solicita que se libere la octava partida de 1,8 $EUA millones para la puesta en ejecución del programa anual del año 2005. Con este financiamiento, la producción y el consumo del halón 1211 en China se mantendrán a un máximo de 1.990 TM y a 1.890 TM, respectivamente. La producción del halón 1301 se mantendrá a un máximo de 600 TM y el consumo se mantendrá a 150 TM. Los detalles del programa anual se dan en la petición sometida por el Banco Mundial, disponible en el sitio Web de la Secretaría del Fondo (www.unmfs.org). El programa anual de 2005 contiene las actividades de asistencia técnica destinadas a apoyar el programa de eliminación gradual de halones y a asegurarse de que los requisitos existentes de protección contra incendios pueden cumplirse.

60. El gobierno de China continuará haciendo licitaciones y mejorándolas para los contratos de cierre/conversión para las actividades de eliminación gradual de halones, basadas en las experiencias obtenidas con los siete primeros programas anuales. Seguirá implantando cuotas de producción negociables y consolidando la interdicción de nuevas instalaciones de extinguidores de halones para usos no esenciales, mediante una redefinición gradual de usos esenciales. Para apoyar la aplicación local de la interdicción de usos no esenciales, el gobierno se asegurará de que los detalles de dicha interdicción se divulguen entre los consumidores eventuales mediante noticias, boletines, etc.; las estaciones locales de bomberos y las oficinas de protección del medio ambiente harán un control regular de los consumidores y presentarán regularmente informes al Ministerio de Seguridad Pública (MPS) y al Agencia Estatal de Protección del Medio Ambiente (SEPA); e introducirán un control más estricto para la venta de halones.

61. Mediante una combinación de cuotas de producción, sistemas de licitación y medidas administrativas, se les concederá a las empresas los fondos necesarios para las actividades de cierre y conversión.

62. China solicita que se libere la cantidad aprobada de 1,8 $EUA millones para el programa anual de 2005 para utilizarse en actividades de asistencia técnica destinadas a apoyar el programa de eliminación gradual de halones y asegurarse de que los requisitos existentes de protección contra los incendios pueden cumplirse.

63. Las actividades de asistencia técnica previstas para el año 2005 son: la verificación de la producción real de extinguidores de CO_2 y que usan agentes limpios, la investigación sobre la determinación de usos críticos de los halones, el establecimiento del mecanismo de supervisión y gestión del Centro de Reciclado de halones de Guangdong, la capacitación del personal implicado en actividades de eliminación gradual, el sondeo de los productores de sistemas de extinción con halón 1301 y las auditorías de desempeño para las empresas del programa anual.

Estado de las iniciativas importantes

Planta de polvo químico seco ABC

64. La planta de polvo químico seco ABC, comprada con los recursos del Acuerdo (Foshan Electro-chemical General), produjo 1.545 toneladas métricas, en 2002, y 3. 014 toneladas métricas, en 2003, después de haber sido puesta en servicio en diciembre de 2002 con una capacidad anual de 3.000 toneladas.

Fabricante de bombonas ligeras de CO2

65. Se ha terminado todo el equipo de producción y la producción comercial de bombonas se inició en octubre de 2004, después de haber sido puesta en servicio por el gobierno de China. La planta tiene una capacidad anual de 600.000 unidades.

Bancos de halones

66. Se seleccionó la empresa Panyu Shengjie Fire-fighting Equipment Company como beneficiaria para instalar un Banco de halones en Guangdong, con una capacidad anual de reciclado de 500 toneladas métricas. Se instaló el equipo y el proyecto fue encargado por el gobierno de China en julio de 2004.

Tecnología de espumas vegetales

67. Se seleccionó la compañía Langfang Yida Technology Company como beneficiaria para instalar la cadena de producción de espuma extinguidora, basada en proteína vegetal, Honsen L119, con una capacidad de 3. 600 toneladas métricas de producción.

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

Objetivos de consumo y producción

68. El informe de auditoría confirmó el logro de los objetivos de consumo y de producción para 2003.

69. Por el segundo año consecutivo, no se produjo halón 1301 en China en 2003, debido a la falta de demanda. Según los términos del Acuerdo, China habría podido producir 6.000 toneladas PAO.

Reservas a finales de 2003

70. El informe de auditoría indicó que la reserva total del halón 211 a finales de 2003 era de 2.416 toneladas métricas (7.248 toneladas PAO) y la del halón 1301, 247,1 toneladas métricas (2.471 toneladas PAO). Los auditores indicaron que el precio de venta del halón 1211 había disminuido en 4 por ciento, yendo de 22.773 RMB/tonelada métrica (2,75 $EUA/kg.) a 21.866 RMB/tonelada métrica (2,64 $EUA/kg.). El precio de venta del halón 1301 había aumentado en un uno por ciento, yendo de 68.338 (8,.25 $EUA /kg.) a 69.167 RMB/tonelada métrica (8,35 $EUA /kg.).

Uso posible del halón 1301 como pesticida

71. El informe de auditoría indicó la posibilidad de utilizar el halón 1301 como materia prima para un pesticida denominado Fiprohil. Los auditores indicaron que no podrían determinar la repercusión del riesgo con respecto al programa de eliminación gradual, si este mercado para el halón 1301 se ampliara en China.

Sondeo sobre la producción de extintores de CO2

72. El Anexo V del documento sobre iniciativas especiales indica que el sondeo para la producción de extintores de CO2 comenzó en junio de 2003 y se esperaba completar antes del 30 de septiembre de 2003. El párrafo E de la Decisión 23/11 indica que China también conviene que, después de una conversión completa, por lo menos 3,59 millones de extinguidores producidos en China, en 2005, serían los que usan CO2 o los que utilicen una tecnología que resulte al menos al mismo costo. De no ser así, se debe consolidar el financiamiento, basado en un índice de 3,08 $EUA por déficit de cada unidad de CO2 o extinguidor equivalente.

73. El Banco indicó que su comprensión del párrafo E de la Decisión 23/11 era que el objetivo es acumulativo más bien que un objetivo anual. Sin embargo, la Secretaría del Fondo observa que conforme al párrafo E, China debe producir 3.59 millones de CO2 o los extintores comparables durante el año de 2005.

74. E l Banco informó el año pasado que los primeros resultados del sondeo sugirieron que la producción nacional de las bombonas de CO2 en 2002 fue de 1,56 millón de unidades. Esto representa un coeficiente de incremento anual de 20 por ciento desde 1999. El Banco también indicó que unos pocos más fabricantes de extinguidores indicaron a SEPA que se proponen entrar en el negocio de bombonas de CO2, porque ha habido un aumento de la demanda en el mercado. Actualmente China realizará otro sondeo que se espera esté terminado para la primera mitad de 2006 e informará al Comité Ejecutivo en el contexto de la propuesta del plan anual correspondiente al año 2007.

RECOMENDACIONES

75. El Comité Ejecutivo puede querer aprobar el Programa de trabajo de 2005 del plan de halones de China en el nivel convenido de 1.800.000 $EUA y un honorario para el organismo de 135.000 $EUA.

ELIMINACIÓN GRADUAL DE LA PRODUCCIÓN Y EL CONSUMO DE CTC PARA AGENTES DE PROCESOS Y OTROS USOS NO IDENTIFICADOS (FASE I): PROGRAMA ANUAL DE 2005

Antecedentes

76. En su 38a. Reunión de noviembre de 2002, el Comité Ejecutivo aprobó, en principio, 65 $EUA millones para el Acuerdo con la República Popular de China destinados a eliminar la producción y el consumo de CTC, y el consumo de CFC-113, como agentes de procesos (fase I); y en la Reunión pagó la primera partida de 2 $EUA millones para comenzar la puesta en ejecución. China se ha comprometido a cumplir con el calendario de eliminación gradual del Protocolo de Montreal para la producción y el consumo de CTC mediante la aplicación del Acuerdo. Posteriormente en su 39a. y 43a. Reuniones, en marzo de 2003 y julio de 2004, el Comité Ejecutivo aprobó los programas anuales de 2003 y 2004 a un nivel de financiamiento de 20 $EUA millones y 16 $EUA millones, respectivamente.

77. E l Banco Mundial propone ahora el programa anual de 2005 en nombre del gobierno de China, tomando nota de que la aprobación de la 4ta. partida de financiamiento de 2 $EUA millones y los costos de apoyo asociados se solicitarán en la 45a. Reunión, al presentar la verificación de la puesta en ejecución del Programa anual de trabajo de 2004. A continuación se indican los objetivos, la repercusión y otros datos clave del programa anual de 2005.

Objetivos y repercusión del programa anual de 2005

Consumo	
CTC para 25 usos como agentes de proceso	
2004	5.049 toneladas PAO
2005	493 toneladas PAO
Repercusión	4.556 toneladas PAO
CFC-113 para agente de procesos	
2004	14 toneladas PAO
2005	14 toneladas PAO
Repercusión	0
Producción	
CTC	
2004	54.857 toneladas PAO
2005	38.686 toneladas PAO
Repercusión	16.171 toneladas PAO
Financiamiento total de FML aprobado en principio	65 $EUA millones
Financiamiento total liberado por el FML antes de octubre de 2004	38 $EUA millones
Nivel de financiamiento solicitado	2 $EUA millones

78. La propuesta del Banco Mundial comienza con un informe sobre la marcha de las actividades relativas a la ejecución del programa anual de 2004 y describe las medidas tomadas por el gobierno a nivel de políticas, por la industria a nivel empresarial para reducir la producción y el consumo de CTC y para la asistencia técnica. El gobierno de China siguió implantando el sistema de otorgamiento de licencias para la producción, consumo y ventas de CTC, que se introdujo en 2003. Según la "Circular sobre la implantación de sistema de licencias-cuotas para la producción de tetracloruro de carbono (CTC)", todos los productores de CTC, inclusive las plantas de clorometano que acaban de construirse tienen cuotas. Las plantas que no las tienen tuvieron que comprar cuotas de otros productores, utilizar el CTC, co-producido como materia prima, o destruirlo.

79. La "Circular sobre el sistema de licencias-cuotas para consumo de CTC", publicada en mayo de 2003, requirió que los distribuidores y las empresas consumidoras de CTC se registraran y solicitaran permisos para vender y comprar las sustancias controladas y presentaran informes trimestrales a SEPA. En 2004 el control se amplió a todos los consumidores de CTC que incluyeron los 25 usos que abarca el Acuerdo, otros nuevos usos de agentes de procesos, usos de solventes y materias primas sin SAO.

80. En 2004 el gobierno expidió la "Circular sobre los procedimientos de gestión para la supervisión *in situ* de las empresas de producción de CTC", que introdujo el mismo sistema de supervisión por pares utilizado en el plan de eliminación gradual de la producción de CFC. Se formó a 20 supervisores que fueron enviados a los productores de CTC a partir de enero de 2004.

81. SEPA firmó contratos con 3 productores exclusivos de CTC para reducir la producción en 8.514 toneladas PAO en 2004, y un destilador para que cerrara su producción de 41 toneladas PAO. La reducción combinada de estos contratos, 8.555 toneladas PAO, aseguraría, según se informa, el logro del objetivo de producción del Acuerdo situado en 54.857 toneladas PAO en 2004, reduciendo el nivel de 61.514 toneladas PAO en 2003.

82. Desde el punto de vista del consumo, SEPA firmó contratos con 12 empresas que usan CTC como agente de procesos por un consumo total de 3.209 toneladas PAO de CTC, cifra que está debajo del objetivo admisible de consumo de 5.049 toneladas PAO del Acuerdo. Una cuota de consumo de 14 toneladas PAO de CFC-113 se otorgó a 4 empresas PTFE, el mismo nivel que el objetivo del Acuerdo. Estos contratos representaron una combinación de control de emisiones, cierre y actividades de conversión. Las tablas 2 y 3 de este documento dan los detalles de estos contratos para las reducciones previstas de producción y consumo.

83. Bajo el programa de asistencia técnica, la propuesta del Banco Mundial informa sobre el avance en numerosas actividades en curso, como una ampliación del sistema de gestión de información para incluir el CTC; la capacitación de productores y auditores de CTC; los servicios de asesoría sobre la conversión de tecnologías sucedáneas de CFC-113 en la producción de PTFE y el control de emisiones en la producción de CSM; sin embargo se planificaron algunas actividades nuevas para 2004, como el taller internacional de 2004 sobre tecnologías de conversión y de incineración de CTC, y la investigación internacional sobre usos de CTC como materia prima.

84. El programa anual de 2005 abarca los objetivos previstos y las actividades propuestas que deben emprenderse para lograr dichos objetivos. El gobierno de China se propone respetar los objetivos establecidos en el Acuerdo y reducir la producción de CTC en 16.167 toneladas PAO, es decir de 54.857 toneladas PAO, en 2004, a 38.686 toneladas PAO, en 2005, y el consumo en 4.556 toneladas PAO, de 5.049 toneladas PAO, en 2004, a 493 toneladas PAO, en 2005. El consumo de CFC-113 para agente de procesos seguiría en 14 toneladas PAO, o sea el nivel estipulado en el Acuerdo.

85. Al nivel de criterios, el gobierno planifica seguir implantando los controles tratados en los párrafos precedentes para la producción y el consumo de CTC y de CFC-113. A los productores y a los consumidores se asignarían cuotas iguales a los objetivos y se formalizarían mediante contratos. Para la reducción de la producción, se firmarían contratos con un productor para que cerrarse su producción y con otros tres productores para que reduzcan el nivel de producción. Las actividades de asistencia técnica para 2005 se centraron en la consolidación de los mecanismos de puesta en ejecución y supervisión del plan sectorial de CTC, como capacitación de los productores, consumidores, distribuidores y auditores de CTC y la realización de auditorías de desempeño. En 2005 se seguirá haciendo la supervisión diaria *in situ* de los productores de CTC.

86. La tabla 4 da los objetivos para el programa anual de 2005 e incluye datos de producción, consumo, una comparación entre los datos de 2004 y 2005, la reducción esperada, el nivel del financiamiento para cada categoría de actividad, los indicadores de supervisión por medida clave y fechas. La tabla 5 contiene un desglose del financiamiento por medida y actividades de la empresa bajo dos categorías de producción y consumo, con las medidas clave y las fechas de terminación. La tabla 6 da detalles sobre el programa de asistencia técnica de 2005, con el financiamiento, las medidas y las fechas de terminación.

87. La propuesta estima un costo total de 12 $EUA millones para poner en ejecución el programa anual de 2005, aunque en el Acuerdo la asignación para 2005 era de 2 $EUA millones. El plan sectorial se propone cubrir el déficit proveniente del saldo no adjudicado de los programas anuales y/o los compromisos no liquidados de 2003-2004, que se financiarán en 2006/2007. El Anexo I provee el estado de todos los productores de CTC en China, con el nivel de la producción hasta 2004. El Anexo II provee una lista de las empresas que consumen CTC con datos sobre los usos, productos y consumo anual de CTC, desde 1997 hasta 2003. El Anexo III contiene una lista de las actividades de asistencia técnica para 2003-04.

Comentarios de la Secretaría

88. El programa de 2005 tiene reducciones significativas que se lograrán, según lo estipulado por el Acuerdo, a saber: 16.171 toneladas PAO de producción de CTC y 4.556 toneladas PAO de consumo. Los resultados del programa anual de 2005 también serán la base para determinar si China podría cumplir con la reducción de 85 por ciento de la producción y el consumo de CTC a partir de la base, según lo requerido por el Protocolo de Montreal. Además, existe la complicación de la coproducción de CTC a partir de la producción de clorometano.

89. El gobierno de China implantó controles más bien estrictos a la producción y el consumo, inclusive el requisito de que todos los distribuidores y consumidores de CTC se inscriban y

obtengan permisos y que todos los productores produzcan bajo licencia, inclusive los productores de clorometano. Además, el gobierno introdujo el mismo mecanismo de supervisión por pares para los productores de CTC, como hizo en el caso de los productores de CFC. El gobierno y el Banco Mundial también convinieron en un sistema de supervisión y de verificación para el plan sectorial que fue examinado y avalado por el Comité Ejecutivo en su 43a. Reunión.

90. Como seguimiento a la Decisión 43/25, que solicitó que la Secretaría y el Banco Mundial examinaran el Acuerdo sobre el CTC e informaran al Comité Ejecutivo sobre la composición de los objetivos, la Secretaría se reunió con el Banco Mundial y examinó los términos y el propósito de los objetivos del Acuerdo dentro del contexto de los requisitos del Protocolo de Montreal y de la producción y consumo de CTC en China. Se concluyó que el Acuerdo no se proponía controlar la producción y el uso de CTC como materia prima para los productos químicos sin SAO, y que China verificaría la cantidad utilizada para tales usos e informaría al respecto a la Secretaría del Ozono, de conformidad con el Artículo 7 del Protocolo de Montreal. Se convino además que había una necesidad de aclarar el alcance del Acuerdo y que esto se debe hacer en forma de una decisión por parte del Comité Ejecutivo, sin examinar el Acuerdo.

Recomendaciones

91. La Secretaría recomienda que el Comité Ejecutivo pueda querer:

a) Confirmar que el Acuerdo con la República Popular de China relativo a la eliminación de CTC en los usos de agentes de procesos (fase I), aprobado en la 38a. Reunión, en 2002, no controla la producción y el uso de CTC como materia prima para los productos químicos sin SAO, y que China debe verificar la cantidad de CTC usada para tales usos e informar al respecto a la Secretaría del Ozono, de conformidad con el artículo 7 del Protocolo de Montreal.

b) Aprobar el Programa de trabajo de 2005, pero retener el financiamiento y los costos de apoyo asociados hasta la 45a. Reunión, cuando el Banco Mundial someta la verificación del Programa de trabajo de 2004.

PLAN SECTORIAL PARA LA ELIMINACIÓN GRADUAL DE LA PRODUCCIÓN DE CFC: PROGRAMA ANUAL DE 2005

Descripción del proyecto

92. Conforme al Acuerdo para el sector de producción de China, que requiere que los programas anuales se sometan a examen en la última reunión del año que precede al año del programa, el Banco Mundial presentó el Programa anual de 2005 para la puesta en vigor del Acuerdo (adjunto al presente documento). Hace esto en el entendimiento de que la aprobación del financiamiento para el programa de 2005 se solicitará en la primera reunión de ese año, basado en el desempeño satisfactorio del programa en 2004, conforme al Acuerdo. La tabla siguiente resume los datos clave del plan sectorial de producción de CFC para China y los programas de trabajo de 2004 y 2005.

País	República Popular de China
Título de proyecto:	Plan sectorial para la eliminación gradual de la producción de CFC en China
Año del plan	2005
Número de años terminados	5
Número de años restantes bajo el plan	5 (según el calendario original)
Tope para la producción de CFC de 2004 (en toneladas PAO)	25.300 toneladas PAO
Tope para la producción de CFC de 2005 (en toneladas PAO)	18.750 toneladas PAO
Financiamiento total aprobado en principio para el plan sectorial de CFC	150 $EUA millones
Financiamiento total desembolsado en octubre de 2004	85 $EUA millones
Financiamiento total desembolsado por el Banco Mundial a China (en octubre de 2004)	65,5 $EUA millones
Nivel del financiamiento solicitado para el plan anual de 2005	13 $EUA millones

93. La propuesta tiene 2 porciones:

a) La Parte I es un informe sumario sobre la puesta en vigor por parte de China del Acuerdo sectorial de eliminación gradual desde que fue aprobado en 1999, inclusive el avance logrado en la ejecución del programa anual de 2004 a mediados de año. A continuación se dan los puntos más destacados del informe sumario:

(i) La puesta en vigor del Acuerdo sectorial de eliminación gradual de la producción de China entre 1999 y 2004 redujo el número de plantas productoras de CFC de 37, en 1999, a 6, en 2004, y la producción de CFC, de 50.351 toneladas PAO, en 1999, a 25.300 toneladas PAO, en 2004 (cifra que será verificada a principios de 2005). La producción anual ha sido confirmada todos los años por una auditoría nacional del programa anual, realizada por la Oficina Nacional de Auditorías de China, y por una verificación internacional de la producción, encargada por el Banco Mundial. Comenzando con el programa anual de 2004, la ejecución del programa de cierre de la producción de CFC empezó a establecer relaciones con otros planes sectoriales conexos que se estaban poniendo en práctica en China. El gobierno determinará cuotas de producción para asegurar que no se excede el tope del consumo total nacional de CFC-11 para 2004 y 2005, precisado en el Acuerdo para la eliminación gradual de CFC en el sector de espumas de poliuretano en China. La verificación conforme al programa proporcionará la supervisión relativa al cumplimiento por parte de China para la producción de CFC-13, según el calendario de control del Protocolo de Montreal para CFC-13. Además, el plan sectorial de producción de CFC también comenzará a regular el suministro de CFC-113 en relación con el plan sectorial de CTC de China para las aplicaciones de agentes de proceso y el plan sectorial de disolventes para usar como solventes. La ejecución del programa anual de 2004 sigue basándose en una combinación de medidas administrativas y de cuotas negociables de la producción, porque el número reducido de productores y la demanda continua del mercado hace cada vez más difícil basarse únicamente en cuotas de producción voluntarias para reducir la producción de CFC. El Anexo 1 incluye 9 tablas que proporcionan una breve historia de los resultados de cada uno de los 5 programas anuales puestos en ejecución hasta la fecha, con nombres de empresas, productos con CFC, la capacidad y el estado de la planta (cerrada o en producción) en 2004. El Banco Mundial verificará los resultados de poner en ejecución el programa de 2004 e informará a la primera reunión del Comité Ejecutivo de 2005.

(ii) El Informe sobre la marcha de las actividades del programa anual de 2004 enumera los controles de las políticas que han sido aprobados por el gobierno de China, como la circular sobre la implantación de sistema de cuotas para la producción de CFC, expedida por SEPA y la Administración Estatal del Petróleo y la Industria Química, el 31 de mayo 1999; la circular sobre la consolidación de la gestión de la importación y exportación de SAO, expedida en abril de 2000; y la circular sobre el mecanismo del control de la importación y la exportación de SAO aprobado en diciembre de 1999. La importación de CTC, una materia prima clave para la producción de CFC, se prohibió en abril de 2000. En 2004 el gobierno sigue aplicando la reglamentación sobre cómo llevar a cabo la supervisión *in situ* de las empresas de producción de CFC, dictada

por SEPA en diciembre de 2001. Conforme a esta reglamentación, SEPA designa a profesionales técnicos de los productores de CFC restantes como supervisores para trabajar en las plantas de los productores pares con el fin de que se supervisen mutuamente *in situ* durante todo el año. Este mecanismo dio prueba de ser un medio eficaz de supervisión.

(iii) Se da una actualización sobre la ejecución del programa de asistencia técnica bajo el cual se iniciaron 30 actividades de las 39 previstas. Además de las actividades tradicionales, como capacitación de oficiales de aduana y del personal encargado de realizar auditorías de desempeño, la propuesta informa sobre el progreso realizado en la creación del Centro de Cumplimiento de China para reforzar la gestión central del cumplimiento de ese país con las medidas de control del Protocolo de Montreal en los años venideros. Parte de los fondos para la creación del Centro provendría del plan sectorial de producción de CFC. El programa anual de 2004 también informó sobre la puesta en servicio de las instalaciones de producción de HFC-134a en China y se consideró la ampliación de la capacidad a 10.000 TM para satisfacer la creciente demanda del país. El Anexo 3 contiene 5 tablas conforme a los programas anuales de trabajo sobre la situación de cada una de las actividades de asistencia técnica previstas.

b) La parte II de la propuesta del Banco Mundial es una descripción de los componentes del programa de 2005, que incluye las medidas, la reducción de la producción que se logrará en las empresas productoras y las actividades de asistencia técnica. El componente clave, a saber, la reducción de la producción, requeriría una eliminación gradual de 6.555 toneladas PAO en 2005 para lograr el objetivo del Acuerdo, o sea, que la producción nacional de CFC se redujera de 25.300 toneladas PAO, en 2004, a 18.750 toneladas PAO, en 2005. China seguirá haciendo reducciones mediante una combinación de licitaciones, de asignación de cuotas de producción y de medidas administrativas. El marco de criterios actual continuará, especialmente la regulación de las cuotas de producción, que el sistema de supervisión *in situ* por pares pondrá en vigor y supervisará en las plantas productoras.

94. La propuesta del Banco Mundial incluye una lista actualizada de 15 empresas productoras de HCFC en China, conforme al Acuerdo. La N° 3 de la lista cambió el nombre, probablemente después de un cambio de directivos; la N° 6, Shanghai Chlor-Alkali Chemical Co. Ltd., cerró su producción de HCFC y desmontó el equipo; la N° 16 se agregó a la lista, porque era una nueva planta de producción de HCFC. El número total de productores sigue siendo 15.

95. Actualmente se planifica gastar los 13 $EUA millones destinados a la ejecución del programa de 2005 en la indemnización de las empresas por reducir su producción de CFC,

aunque se podría hacer una nueva asignación una vez que se disponga de un cálculo más exacto de los gastos.

Comentarios de la Secretaría

96. La ejecución del Programa anual de trabajo de 2004 en junio de ese año se realiza tal y como fue previsto, y la producción de CFC, a mitad del año, fue de un 50 por ciento del nivel admisible anual de producción. La supervisión por pares *in situ* de los productores de CFC, instituida por SEPA, demostró ser una herramienta eficaz para supervisar la producción de CFC. Una evaluación completa del Programa de trabajo de 2004 estaría disponible cuando se presente a la 45a. Reunión, en 2005, una verificación independiente del programa.

97. El gobierno de China y el Banco Mundial comenzaron a relacionar el plan sectorial de producción de CFC con otros planes pertinentes de eliminación gradual del sector de consumo que están poniéndose en práctica en China, en 2004. Esto constituyó una buena práctica, porque el control que un país productor de CFC tiene de la producción de CFC ayudó a supervisar los suministros de dichas SAO, conforme a los términos de los acuerdos sectoriales de consumo. Al mismo tiempo permitió supervisar el consumo de las SAO en cuestión en esos sectores, como el consumo de CFC-113 bajo el plan sectorial de solventes y el plan sectorial de CTC y el CFC-11 bajo el plan sectorial de espumas. Se alienta al gobierno de China y al Banco Mundial a que examinen las relaciones entre el plan sectorial de producción de CFC y otros planes sectoriales de consumo, con el fin de supervisar su ejecución.

98. Los objetivos para el Programa de trabajo de 2005 fueron coherentes con el Acuerdo, las actividades fueron bien planeadas y las fechas de terminación fueron razonables. La buena ejecución del programa anual reduciría la producción de CFC en China a 18.750 toneladas PAO, lo que estaría por debajo del 50 por ciento de reducción de la base de China, de 47.004 toneladas PAO, requeridas conforme al calendario de control del Protocolo de Montreal.

Recomendaciones

99. La Secretaría recomienda que el Comité Ejecutivo:

a) Apruebe el Programa de trabajo de 2005 del programa de cierre de producción de CFC en China, tomando nota de que el Banco Mundial presentará el pedido de financiamiento y costos de apoyo a la 45a. Reunión junto con un informe de verificación sobre la ejecución del programa anual de 2004.

b) Aliente al gobierno de China y al Banco Mundial a que examinen, para fines de supervisión, las relaciones entre el plan de eliminación gradual del sector de producción de CFC y otros planes pertinentes de CFC y otros planes sectoriales de consumo de SAO.

HOJA DE EVALUACIÓN DE PROYECTO (PROYECTOS PLURIANUALES)
PAÍS: CHINA

TÍTULO DEL PROYECTO	**ORGANISMO BILATERAL/ORGANISMO DE EJECUCIÓN**
Plan de eliminación gradual de CFC en el sector de servicio y mantenimiento de refrigeración	ONUDI y Japón

ORGANISMO DE COORDINACIÓN NACIONAL:	SEPA

DATOS DE CONSUMO MÁS RECIENTE PARA SAO OBJETO DEL PROYECTO

A: DATOS DEL ARTÍTULO 7 (TONELADAS PAO, 2003, A OCTUBRE DE 2004)

CFC	22 826		

B: DATOS SECTORIALES DEL PROGRAMA DE PAÍS (TONELADAS PAO, 2003, A OCTUBRE DE 2004)

SAO	Espumas	Refrig.	Aerosoles	SAO	Solventes	Agentes de proceso	Fumigantes
CFC-11	11 423	1 672	280	CFC-113	1 677		
CFC-12	116	6 044	780				
CFC-114		8					
CFC-115		187					

Consumo de CFC remanente admisible para la financiación (toneladas PAO)	940,5

PLAN ADMINISTRATIVO DEL AÑO EN CURSO: Financiación total (ONUDI) 1 075 millones $EUA Eliminación total: 200 toneladas PAO.

DATOS DEL PROYECTO		2004	2005	2006	2007	2008	2009	2010	Total
CFC (Toneladas PAO)	Límites del Protocolo de Montreal	57 819	28 909	28 909	8 673	8 673	8 673	0	n.d.
	Límite de consumo anual (serv. de refrig.)	4 628	4 162	3 424	2 704	2 051	1 590	1 100	n.d.
	Eliminación anual con proyectos en curso	0	0	0	0	0	0	0	
	Eliminación anual nueva abordada	0,0	466	738	720	653	461	490	3 528
	Eliminación anual no financiada	0	0	0	0	0	0		
CONSUMO TOTAL DE SAO A ELIMINAR			466	738	720	653	461	490	3 528
Consumo total de SAO a agregar (HCFC)			0	0	0	0	0	0	0
Costo del proyecto según presentación original (000 $EUA)		2 070	5 520	1 251	0	0	0	0	8 841
Costos finales del proyecto (000 $EUA):									
	Financiación para la ONUDI	1 000	0	700	700	700	500	285	3 885
	Financiación para el Japón	1 000	3 000	0	0	0	0	0	4 000
	Financiación total del proyecto	2 000	3 000	700	700	700	500	285	7 885
Costos de apoyo finales (000 $EUA)									
	Costo de apoyo para organismo principal, ONUDI	75	0	52 5	52 5	52 5	37 5	21 375	291 375
	Costo de apoyo para el Japón	130	390	0	0	0	0	0	520
	Total de costos de apoyo	205	390	52 5	52 5	52 5	37 5	2 1375	811 375
COSTO TOTAL AL FONDO MULTILATERAL ($EUA) (000 $EUA)		2 205	3 390	752 5	752 5	752 5	537 5	306 375	8 696 3 75
Relación de costo a eficacia final del proyecto ($EUA/kg)									5,48

SOLICITUD DE FINANCIACIÓN: Aprobación en principio de la eliminación de SAO total, la financiación total y los costos de apoyo totales del proyecto y aprobación de la financiación del primer tramo (2004) como se indica en los párrafos precedentes

RECOMENDACIÓN DE LA SECRETARÍA	Pendiente

DESCRIPCIÓN DEL PROYECTO

100. El Gobierno de China ha presentado a la consideración del Comité Ejecutivo en la 44ª Reunión un Plan sectorial para la eliminación gradual de los CFC en el sector de servicio y mantenimiento de refrigeración (el Plan). El Plan fue preparado por la ONUDI y el Gobierno del Japón como un proyecto bilateral. El Plan se debe considerar dentro del contexto del Plan para la eliminación gradual acelerada de los CFC en China, conforme al cual China cesará la producción de CFC con dos años de anticipación a lo estipulado en el Acuerdo sectorial sobre la producción de CFC; de ese modo, no se producirán CFC a partir del 1° de enero 2008 (excepto CFC para los usos esenciales que pudieran convenirse). Desde 2008 en adelante, la demanda de CFC se satisfará ya sea por medio de las existencias disponibles o con bancos de CFC recuperados, reciclados y regenerados de equipos que utilizan CFC. El Banco Mundial presenta el Plan para la eliminación gradual acelerada de los CFC también a consideración de la 44ª Reunión. La ejecución del Plan sectorial para la eliminación gradual de los CFC en el sector de servicio y mantenimiento de refrigeración producirá la eliminación del consumo remanente de sustancias del Grupo I del Anexo A (CFC) en el sector de servicio y mantenimiento de refrigeración en China. El costo solicitado para el plan, tal como se propone, es de 8 841 100 $EUA (excluidos los costos de apoyo de organismo).

Consumo de SAO en China

101. En la tabla siguiente se muestran los datos históricos sobre consumo y producción de CFC desde 1995 hasta 2002 en toneladas PAO:

Año	1995	1996	1997	1998	1999	2000	2001	2002
Consumo	75 290,8	47 089	51 076,4	55 414	42 983,4	39 123,6	33 922,6	30 621,2
Producción	46 671,6	44 016,2	50 323,8	55 402	44 739,4	39 962,8	36 167,2	32 269

102. El consumo de referencia medio de sustancias del Grupo I del Anexo A de China durante el período de 1995 a 1997 ascendió a 57 818,7 toneladas PAO. El país siempre ha cumplido con las medidas de control del Protocolo de Montreal para el consumo de CFC.

103. La tabla siguiente muestra los datos de consumo de CFC relacionados con la admisibilidad de la asistencia del Fondo Multilateral para China en toneladas PAO:

Consumo básico	57 818,7
Punto de partida establecido según la Decisión 35/57	4 745,0
Consumo creado desde el punto de partida	2 367,5
Consumo remanente admisible no financiado a la presentación de la propuesta	**2 377,5**

104. De las 2 377,5 toneladas PAO admisibles para la financiación, el Gobierno de China ha determinado 1 437 toneladas PAO para el plan de eliminación para el sector de servicio y mantenimiento.

105. Para fines de 2003, la mayoría de los planes de eliminación para los sectores de consumo de CFC habían sido aprobados por el Comité Ejecutivo y estaban en ejecución. Estas actividades incluyen eliminación de SAO en el sector de solventes, eliminación de CFC-11 en el sector de tabaco, eliminación de CFC-11 en el sector de espumas, eliminación de CFC en el sector de refrigeración doméstica y eliminación de CFC en el sector de refrigeración industrial y comercial.

106. Sujeto a la aprobación y ejecución de este plan para el sector de servicio y mantenimiento, el pronóstico de consumo de CFC para los años 2003 a 2010 conforme al plan para la eliminación gradual acelerada se presenta por sectores en la Tabla 5.

Tabla 5: Pronóstico de consumo de CFC en China (toneladas)

Producción/ Consumo	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Consumo máximo permitido	**57 818,7**	**57 818,7**	**28 909,3**	**28 909,3**	**8 672,8**	**8 672,8**	**8 672,8**	**0**
Producción máxima permitida según el Acuerdo	30 000	25 300	18 750	13 500	9 600	7 400	3 200	0
Objetivo de eliminación acelerada para la producción de producción de CFC	**30 000**	**25 300**	**18 750**	**13 500**	**9 600**	**0****	**0****	**0****
	CFC-11							
Sector de espumas	11 423	11 666	9 646	7 164	400	0	0	0
Sector de tabaco	620	500	300	150	0	0	0	0
Sector de refrigeración doméstica	1 325	927	649	0	0	0	0	0
Aerosoles farmacéuticos para uso externo	178	190	204	234	208	104	260	0
Inhaladores de dosis medidas	102	107	109	125	144	144	144	*
Servicio y mantenimiento de enfriadores	347	303	258	214	198	171	101	81
Total CFC-11	13 995	13 693	11 166	7 887	950	419	271	81

Producción/ Consumo	2003	2004	2005	2006	2007	2008	2009	2010
	CFC-12							
Sector de espumas	116	100	0	0	0	0	0	0
Sector de refrigeración doméstica	331	232	162	0	0	0	0	0
Sector de refrigeración comercial e industrial	623	500	500	0	0	0	0	0
Aerosoles farmacéuticos para uso externo	513	555	580	667	592	296	74	0
Inhaladores de dosis medidas	267	290	309	356	409	409	409	*
Compuesto para servicio y mantenimiento de refrigeración	5 090	4 628	4 162	3 424	2 704	2 051	1 590	1 100
Total de consumo de CFC-12	6 940	6 305	5 713	4 447	3 705	2 756	2 073	1 100
Total de demanda de CFC-113	1 677	1 100	550	0	0	0	0	0
Total de demanda de otros CFC	212	164	164	164	164	0	0	0
Demanda esperada según el plan para la eliminación gradual acelerada**	**22 824**	**21 262**	**17 593**	**12 498**	**4 819**	**3 175**	**2 344**	**1 181**
Exportación menos importación	7 176	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.	n.d.
CFC adicional dentro del plan para la eliminación gradual acelerada	0	4 038	1 157	1 002	4 781	-3 175	-2 344	-1 181

* Uso esencial, que debe ser acordado por las Partes

** Excepto la producción para usos esenciales incluidos los inhaladores de dosis medidas no eliminados aún conforme a un acuerdo separado futuro

107. Sólo el sector de servicio y mantenimiento de refrigeración y aire acondicionado y de fabricación de inhaladores de dosis medidas consumirán CFC después de 2007. A fin de satisfacer la demanda de CFC en el sector de servicio y mantenimiento, China formará bancos de CFC durante 2006 y 2007 y comenzará a recuperar y reciclar/regenerar/reutilizar CFC a través del sector de servicio y mantenimiento. China también alentará el uso de refrigerantes *"drop-in"* de alternativa en las instalaciones de retroadaptación a fin de reducir la demanda de CFC para el servicio y mantenimiento de los equipos de refrigeración industrial y comercial. Asimismo, China decidió acelerar la eliminación en el sector de espumas a fin de reducir el consumo directo en 2006 y 2007.

108. El sector de servicio y mantenimiento de refrigeración de China se ha dividido en categorías de cuatro subsectores, a saber: equipos de aire acondicionado de vehículos, sector de refrigeración doméstica, sector de refrigeración industrial y comercial y enfriadores. A continuación se presenta una breve descripción de cada subsector.

Sector de equipos de aire acondicionado de vehículos

109. La producción total de vehículos de China aumentó de 0,71 millón en 1991 a alrededor de 2,3 millones en 2001, y comprende casi 703 000 automóviles, 829 000 autobuses y 802 000 camiones. En 2001, de los 703 000 automóviles de pasajeros producidos en China, 697 000 automóviles estaban equipados con sistemas de aire acondicionado de vehículos, lo que

representa 99% del total en comparación con 88% en 1991. El índice de instalación de equipos de aire acondicionado de vehículos en autobuses era de alrededor de 37% en 2001. Hasta 1993, todos los vehículos producidos en China usaban CFC-12 como refrigerante. Desde 1993 en adelante, los fabricantes de vehículos y equipos de aire acondicionado de vehículos fabricantes comenzaron a buscar alternativas al CFC-12. En 1995, 97,6% de los sistemas de aire acondicionado de vehículos de los automóviles de pasajeros producidos en China eran a base de CFC, mientras que 2,4% eran a base de HFC-134a. En 2001, la cantidad de equipos de aire acondicionado de vehículos a base de CFC cayó a sólo 14,5%, mientras que la proporción de equipos de aire acondicionado de vehículos a base de HFC-134a había aumentado a 85,5%. En el año 2002, todo los equipos de aire acondicionado de vehículos eran a base de HFC-134a. Del mismo modo, hasta 1995, todos los automóviles importados estaban equipados con equipos de aire acondicionado de vehículos a base de CFC-12; sin embargo, desde entonces, se han importado sólo automóviles equipados con equipos de aire acondicionado de vehículos a base de HFC-134a. En 2001, había casi 678 000 automóviles importados con equipos de aire acondicionado de vehículos a base de CFC en China. Según los hallazgos del estudio del equipo de expertos, casi 80% del consumo de CFC se atribuye a las instalaciones y estaciones de servicio de propiedad de los fabricantes de automóviles. El uso de CFC-12 en 2003 fue de 1 434 toneladas PAO.

Sector de refrigeración doméstica

110. En 2001, los refrigeradores y congeladores a base de CFC-12 componían alrededor del 75% del parque total de 165 millones de unidades, mientras que el 25% restante eran equipos a base de alternativa sin SAO. Los refrigeradores a base de HFC-134a componían alrededor del 11% del parque total, mientras que los refrigeradores a base de R-600a componían el 10,2% y los equipos a base de otros refrigerantes componían el 3,1% restante.. Hay diversas categorías de talleres de reparación de refrigeradores domésticos:

- Talleres de reparación especiales establecidos por los fabricantes de refrigeradores para prestar servicio a sus propios productos. Estos talleres de servicios están por lo general relativamente bien equipados y los técnicos de servicio están bien capacitados. Algunos grandes fabricantes tienen más de 100 talleres de reparaciones especiales;

- Los talleres de reparación contratados tienen contratos con uno o más gran fabricante de refrigeradores. Más de 4 000 talleres de reparación contratados trabajan para los grandes fabricantes. Los fabricantes medianos tienen alrededor de 1 000 talleres de reparación contratados y los fabricantes pequeños tienen alrededor de 100 talleres de servicio y mantenimiento; y

- Además, hay diversos talleres de reparación privados, establecidos por comunidades locales o comerciantes de refrigeradores. Estos talleres generalmente emplean a uno o dos técnicos o consisten en un negocio familiar.

111. El consumo total estimado de CFC-12 del servicio de electrodomésticos de refrigeración durante 2001 ascendió a 484 toneladas.

Sector de refrigeración comercial e industrial

112. El sector de refrigeración comercial e industrial incluye diversos aparatos, tales como congeladores para alimentos, cámaras frigoríficas, dispensadores de bebidas frías, máquinas de helados, camiones refrigerados, etc. Desde el punto de vista del servicio y mantenimiento, se han considerado tres categorías, a saber: refrigeradores y congeladores comerciales, cámaras frigoríficas pequeñas y sistemas de refrigeración industrial. En 2001, el parque de refrigeradores y congeladores comerciales usado en China constaba de casi 50 millones de unidades. Alrededor de 75% de éstas eran a base de CFC-12. El parque de cámaras frigoríficas pequeñas del país en 2001 era de casi 300 000 unidades, de las que el 40% eran a base de CFC-12.

113. El servicio y mantenimiento de los equipos de refrigeración industrial y comercial está a cargo principalmente de los fabricantes o de sus firmas de servicio y mantenimiento autorizado. Algunos de los principales productores de equipos del sector de refrigeración industrial y comercial del país, influenciados por el modelo gerencial de los fabricantes de refrigeración extranjeros que trabajan en China, han establecido departamentos de servicio y mantenimiento en las ciudades grandes y medianas para el mantenimiento de los equipos de refrigeración vendidos y el suministro de piezas. Muchos fabricantes también confían el trabajo de servicio y mantenimiento posventa a sus distribuidores. También hay un grupo de agencias de mantenimiento de administración conjunta. Para fines de 2001, había casi 10 000 firmas de servicio y mantenimiento del sector de refrigeración industrial y comercial en China. Éstas empleaban en total a casi 100 000 técnicos. El consumo total estimado de CFC en el servicio y mantenimiento de refrigeración industrial y comercial durante 2001 fue de 3 474 toneladas. Éstas incluían casi 234 toneladas para el servicio y mantenimiento de refrigeradores y congeladores comerciales, 2 400 toneladas para cámaras frigoríficas pequeñas y 840 toneladas para sistemas de refrigeración industrial.

Sector de enfriadores

114. Se calcula que la cantidad total de enfriadores a base de CFC-11 del país en 2001 era de casi 3 710 unidades, de las cuales 1 909 eran importadas, mientras que el resto se producía en el país. Del mismo modo, la cantidad total de enfriadores a base de CFC-12 para el mismo año era de 338 unidades, de las cuales 231 eran importadas, mientras que el resto eran producidas en el país. La cantidad total acumulada de CFC-11 y CFC-12 en todos los enfriadores (incluidos los importados y los producidos en el país) fue de 2 334 y 141 toneladas respectivamente en el año 2001. El índice de pérdidas de CFC (tanto CFC-11 como CFC-12) estimado en los enfriadores, tanto importados como de fabricación nacional, es de 20% de la carga original. El consumo de CFC-11 estimado para servicio y mantenimiento en el año 2001 fue de 467 toneladas, que incluían 248 toneladas para enfriadores importados y 219 toneladas para enfriadores de fabricación nacional. Del mismo modo, el consumo de CFC-12 estimado para servicio y mantenimiento en el año 2001 fue de 28 toneladas, que incluían 15,5 toneladas para enfriadores importados y 12,5 toneladas para enfriadores de fabricación nacional.

115. Según la estrategia descrita en el Capítulo 4, se prevén actividades para que todos los subsectores de servicio y mantenimiento de refrigeración reduzcan el consumo de CFC; sin

embargo, se solicita asistencia del Fondo Multilateral (MLF) principalmente para el servicio y mantenimiento de los equipos de aire acondicionado de vehículos. El consumo de CFC en los subsectores de refrigeración industrial y comercial y de enfriadores se reducirá mediante otros esfuerzos del Gobierno de China y la industria local. El subsector de refrigeración doméstica recibirá asistencia del Fondo Multilateral por medio de la realización de un programa de capacitación para técnicos en servicio y mantenimiento. Todos los subsectores de servicio y mantenimiento se beneficiarán con las medidas legislativas y programas de sensibilización previstos.

Estrategia para reducir el consumo de CFC en las operaciones de servicio y mantenimiento de refrigeración

116. Se espera que el uso de CFC se reduzca por medio de la implementación de programas de sensibilización, medidas legislativas y un programa de capacitación de técnicos exhaustivo. La liberación intencional o las pérdidas no intencionales de refrigerantes con CFC de los equipos se reducirá durante las tareas de servicio o mantenimiento así como durante el funcionamiento de los equipos gracias a mejores prácticas de servicio. Asimismo, se propone reducir gradualmente el consumo de CFC en el sector de servicio y mantenimiento desde 2005 hasta 2010 por medio de la introducción del programa nacional de recuperación y reciclaje para el subsector de equipos de aire acondicionado de vehículos. De este modo, los talleres de servicio podrán contar en mayor medida con refrigerantes recuperados, reciclados o regenerados para sus tareas de servicio y mantenimiento. El Gobierno de China ha identificado al sector de servicio y mantenimiento de equipos de aire acondicionado de vehículos como un área de prioridad en la solicitud de financiación para inversión.

117. Las siguientes propuestas forman parte de la estrategia de eliminación prevista para el servicio y mantenimiento de equipos de aire acondicionado de vehículos:

a) Capacitación de técnicos de servicio

b) Creación de sensibilización

c) Suministro de equipos de recuperación y reciclaje a firmas de servicio y mantenimiento de equipos de aire acondicionado de vehículos

d) Establecimiento de una red nacional de recuperación, regeneración y destrucción

e) Fortalecimiento de escuelas de educación vocacional nacionales

f) Diseño de un código de prácticas apropiado

g) Sistema de gestión de información y supervisión

h) Desarrollo de políticas

Impacto de la propuesta

118. La adopción de buenas prácticas de servicio puede ayudar por sí misma a reducir las pérdida y, por lo tanto, a reducir el plazo entre servicios. Un cálculo conservador de la cantidad de CFC que se ahorra por medio de la aplicación de buenas practicas indica que asciende a 20% del CFC consumido en el sector de servicio y mantenimiento de equipos de aire acondicionado de vehículos. Se espera que las tres medidas clave, es decir, capacitación, campañas de sensibilización y diseño de un código de prácticas apropiado permitan a las firmas de servicio de equipos de aire acondicionado de vehículos adoptar buenas práctica de servicio y la recuperación y reciclaje, lo que contribuirá al proceso de eliminación de CFC. Los CFC regenerados de vehículos retirados del parque automotor estarán disponibles para el uso en 2010 y en el período posterior para satisfacer la demanda del servicio y mantenimiento para el parque de equipos de aire acondicionado de vehículos y otros electrodomésticos y equipos de refrigeración a base de CFC existente.

119. En otros subsectores, la capacitación, la creación de sensibilización y el establecimiento de un código de buenas prácticas contribuirán a promover la adopción de buenas prácticas de servicio en las firmas de servicio y mantenimiento. Esto ayudará a reducir el consumo de refrigerantes a base de CFC en el servicio y mantenimiento de electrodomésticos y aparatos comerciales, ya que se impedirá el uso de CFC para el enjuague y las pruebas de pérdidas; los métodos de carga apropiados ayudarán a evitar el desperdicio en la carga y las buenas técnicas de soldadura ayudarán a reducir las pérdidas al mínimo. Además, la adopción de técnicas de recuperación y reciclaje ayudarán a usar los CFC recuperados para el servicio, reduciendo el consumo de CFC vírgenes.

120. Según un cálculo conservador, las firmas de servicio y mantenimiento del sector de refrigeración doméstica podrán lograr una reducción de alrededor del 50% en el consumo de CFC por medio de las buenas prácticas, siempre que las firmas de servicio y mantenimiento también usen las herramientas y los equipos requeridos. En la práctica, puede resultar razonable suponer que las firmas que consumen grandes cantidades de CFC de estos sectores invierten sus propios recursos o cuentan con respaldo del Gobierno para adquirir las herramientas y los equipos requeridos. Si sólo 50% hacen esta inversión, se puede esperar un impacto neto de reducción en el consumo de CFC de alrededor de 25% por lo menos en el servicio y mantenimiento del sector de refrigeración doméstica. En el sector de refrigeración industrial y comercial, sin embargo, será más difícil lograr ahorros semejantes, ya que la red de servicio y mantenimiento es muy dispersa y resulta difícil identificar a las firmas que consumen grandes cantidades de CFC y dirigir las actividades a las mismas. Por lo tanto, se considera que el impacto de la capacitación es de una reducción de sólo 15% del consumo de CFC. En el caso de los enfriadores, se considera que el impacto de la capacitación es de sólo 15% del consumo de CFC.

121. El consumo total de CFC de 5 437 toneladas PAO en 2003 en el sector de servicio y mantenimiento de refrigeración se reducirá gradualmente según el calendario en la tabla siguiente. Esta reducción se logrará por medio de la ejecución de las actividades contenidas en este plan de eliminación sectorial.

Demanda de CFC y calendario de reducción del consumo en los subsectores de servicio y mantenimiento de refrigeración (toneladas PAO)

Subsector	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Servicio y mantenimiento de aire acondicionado de vehículos (CFC-12)	1 434	1 303	1 139	946	674	384	220	73	18	5	0		
Servicio y mantenimiento de aparatos domésticos (CFC-12)	474	463	447	417	380	346	316	288	210	170	121	74	37
Servicio y mantenimiento de refrigeración industrial (CFC-12)	3 159	2 843	2 559	2 047	1 637	1 310	1 048	734	607	498	358	221	115
Servicio y mantenimiento de enfriadores (CFC-11)	347	303	258	214	198	171	101	81	70	62	54	47	41
Servicio y mantenimiento de enfriadores (CFC-12)	23	19	17	14	13	11	6	5	4	3	2	1	1
Subtotal (CFC-12)	5 090	4 628	4 162	3 424	2 704	2 051	1 590	1 100	839	676	481	296	153
Subtotal (CFC-11)	347	303	258	214	198	171	101	81	70	62	54	47	41
Demanda total en el sector de servicio y mantenimiento de refrigeración	5 437	4 931	4 420	3 638	2 902	2 222	1 691	1 181	909	738	535	343	194
Reducción total	0	506	511	782	736	680	531	510	272	171	203	192	149

122. Resulta evidente que continuará existiendo una demanda sustancial de CFC-12 en el año 2010 y posteriormente debido a la necesidad de servicio y mantenimiento para los equipos de refrigeración a base de CFC existentes. También, como resultado de la falta de disponibilidad de CFC en el mercado, los usuarios finales quizás deban optar por la retroadaptación de los aparatos existentes con refrigerantes de alternativa cuando deban prestar servicio a los equipos de refrigeración. Se deberán aplicar opciones similares para los equipos de refrigeración comercial grandes. Para los enfriadores, las cámaras frigoríficas y los equipos de refrigeración industrial, quizá se deba adoptar la opción de la retroadaptación, así como el retiro anticipado antes de 2010.

Costos adicionales

123. La tabla siguiente presenta una descripción general resumida de las actividades y los costos adicionales. Se ha formulado un pronóstico general de 8,84 millones $EUA de costo. Los principales componentes del plan son: capacitación de técnicos, con inclusión de compra de equipos para los centros de capacitación, apoyo para la recuperación y el reciclaje para firmas de servicio y mantenimiento de equipos de aire acondicionado de vehículos y establecimiento de un centro de regeneración y creación de sensibilización y diseño de un código de prácticas apropiado, así como supervisión y sistema de gestión de información. Se dará flexibilidad a China para el uso de los fondos y, conforme a los progresos del proyecto y las experiencias recogidas, el componente de inversión se ajustará para satisfacer completamente las necesidades del componente de capacitación.

Rubros	Descripción	Organismo	Subtotal
Supervisión y sistema de gestión de información	Diseño del sistema de gestión de información, supervisión de capacitación, recuperación y reciclaje, recuperación, etc.	ONUDI	140 000
Coordinación, consultor, establecimiento de oficina, equipos de oficina, servicios locales, viajes, informes, etc.		ONUDI	100 000
Fortalecimiento de la capacidad de la estructura de gestión de las instituciones nacionales locales		ONUDI	100 000
Desarrollo de políticas y estudios de investigación		ONUDI	30 000
Creación de sensibilización	Folletos para sensibilización del público, CD, talleres	ONUDI	340 000
Código de prácticas de servicio	Talleres con expertos para diseñar, examinar y modificar el código de prácticas apropiado	JAPÓN	50 000
Código de prácticas de servicio	Impresión y distribución del código	JAPÓN	50 000
Subtotal de gestión del proyecto			**810 000**
Equipos para 30 centros de capacitación	Dos juegos de equipos para cada centro	JAPÓN	330 000
Equipamiento de un centro nacional de capacitación	Para la capacitación de los instructores	JAPÓN	55 000
Desarrollo de material de capacitación	Incluye traducción e impresión	ONUDI	80 000
Capacitación de Instructores	Cantidad de talleres, capacitación de instructores	JAPÓN	280 000
Costo de capacitación	3 de capacitación, costo por participante, honorario de los profesores, aranceles de alquiler, equipo de capacitación, etc.	ONUDI	2 250 000
Capacitación en línea		ONUDI	20 000
Fortalecimiento de escuelas de educación vocacional	Participación de contraparte		0
Subtotal de capacitación de técnicos			**3 015 000**
Equipo de recuperación y reciclaje para equipos de aire acondicionado de vehículos	Sólo financiación parcial debido a disponibilidad limitada de fondos	JAPÓN	4 060 000
Equipos de recuperación para recuperación local de CFC de vehículos retirados	Incluye almacenamiento	JAPÓN	150 000
Centro de regeneración para refrigerantes retirados		ONUDI	350 000
Imprevistos, 10 %			456 000
Subtotal de recuperación y reciclaje y regeneración			**5 016 000**
Subtotal para Japón			**4 975 000**
Subtotal para la ONUDI			**3 866 000**
Costos totales netos del proyecto			**8 841 000**
Costo de apoyo de organismo para Japón	13%		**646 750**
Costo de apoyo de organismo para la ONUDI	7,50%		**289 950**
Total costos adicionales			**936 700**
TOTAL para JAPÓN			**5 621 750**
TOTAL para la ONUDI			**4 155 950**
TOTAL GENERAL			**9 777 700**

Gestión, supervisión y evaluación

124. La función de ejecución principal es responsabilidad del SEPA, que se hará cargo de la dirección general, en consulta con la ONUDI. La Oficina de Gestión de Proyecto del SEPA supervisará todas las actividades. A fin de asegurar la participación de los interesados de los subsectores pertinentes, se creará un Grupo de Trabajo Especial que incluirá a oficiales del SEPA, asociaciones de la industria y los ministerios pertinentes. Las asociaciones industriales clave incluyen a la Asociación China de la Industria Automotriz (CAAI), la Asociación China de Electrodomésticos y Artefactos Eléctricos (CHEAA) y la Asociación China de la Industria del Aire Acondicionado (CRAA). La CHEAA representa al sector de refrigeración doméstica, incluidos productores de refrigeradores y congeladores y estaciones de servicio de dichos productores. La CRAA representa a los productores del sector de refrigeración comercial e industrial y enfriadores y las estaciones de servicio de dichos productores. La CAAI representa a los productores de automóviles, incluidos productores de equipos de aire acondicionado de vehículos y estaciones de servicio de equipos de aire acondicionado de vehículos. Los ministerios clave, que deberán estar representados en el Grupo de Trabajo Especial, incluyen al Ministerio de Trabajo, el Ministerio de Transporte e Industria Estatal y Administración Comercial.

COMENTARIOS Y RECOMENDACIÓN DE LA SECRETARÍA

COMENTARIOS

125. La Secretaría indicó a la ONUDI que la supervisión y la presentación de informes de la eliminación de CFC en el sector de servicio y mantenimiento de refrigeración de los países que operan al amparo del Artículo 5 es dificultosa. La supervisión del consumo de CFC en el sector de servicio y mantenimiento de refrigeración sólo puede realizarse dentro del contexto de la presentación de informes en el nivel nacional con arreglo al Artículo 7 del Protocolo de Montreal. La Secretaría sugirió que, por este motivo, podría ser útil presentar el plan de eliminación para el sector de servicio y mantenimiento de refrigeración de China dentro del contexto de un acuerdo general para la eliminación de CFC en el nivel nacional, que incorporara todo el consumo de CFC remanente admisible para la financiación.

126. El plan para la eliminación gradual acelerada de los CFC se ha presentado a la 44ª Reunión. El consumo nacional general resultante en un año particular del Plan para la eliminación acelerada de los CFC representa un objetivo nacional de reducción de los CFC. El calendario de reducción de CFC propuesto en el plan de eliminación para el sector de servicio y mantenimiento de refrigeración es parte del calendario de reducción de CFC refundido de China. La Secretaría señaló que se podrían lograr los objetivos de reducción y la supervisión de los progresos en la ejecución del plan de eliminación para el sector de servicio y mantenimiento de refrigeración si se obtenía una imagen abarcadora de cómo contribuyen las reducciones en cada sector a las reducciones generales en el país conforme al plan para la eliminación gradual acelerada. La ONUDI indico que, en el Acuerdo, los objetivos de consumo de CFC del plan de eliminación para el sector de servicio y mantenimiento de refrigeración estarían vinculados a los

objetivos de consumo máximo permitido de CFC previstos en el Plan para la eliminación acelerada de los CFC.

127. El plan de eliminación para el sector de servicio y mantenimiento de refrigeración abordará la eliminación del consumo total de CFC en el sector de servicio y mantenimiento de refrigeración, que se ha determinado es de 5 437 toneladas PAO. El consumo remanente admisible de China es de 2 377,5 toneladas PAO a abril de 2004. El Gobierno de China ha asignado 1 437 toneladas PAO del consumo remanente admisible total para el plan de eliminación de CFC en el sector de servicio y mantenimiento de refrigeración. Con la aprobación del plan de eliminación para el sector de servicio y mantenimiento de refrigeración, el consumo remanente admisible de China será de 940,5 toneladas PAO.

128. En el informe sobre la marcha de las actividades de 2004, el Banco Mundial indicó que China tenía intención de reasignar la financiación del proyecto final del plan para el sector de refrigeración comercial a actividades de servicio y mantenimiento de refrigeración comercial. El plan de eliminación para el sector de servicio y mantenimiento de refrigeración presentado por la ONUDI incluye actividades y solicitudes de financiación para el subsector de servicio y mantenimiento de refrigeración comercial. La Secretaría informó al Banco Mundial que la reasignación de los fondos aprobados a otro subsector para el cual se solicitaba financiación constituiría una doble contabilización, a menos que se tomara en cuenta la eliminación a ser lograda con los fondos reasignados y se la dedujera del consumo remanente admisible de China. Posteriormente, el Banco Mundial informó a la Secretaría que el saldo no asignado aprobado para el sector de refrigeración comercial se usaría para otras actividades no relacionadas con el servicio.

129. La Secretaría y la ONUDI analizaron el costo unitario de los equipos de recuperación y reciclaje que se producirían localmente en China. El costo unitario parecía ser más alto que lo esperado en comparación con el costo de equipos pertinentes ofrecidos por proveedores internacionales. La Secretaría señaló a la atención de la ONUDI la posible duplicación de actividades incluida en el programa de sensibilización y el programa de capacitación, así como la pertinencia de los proyectos de capacitación en políticas anteriormente aprobados para China. La Secretaría, por lo tanto, propuso reducir el presupuesto propuesto para el componente de gestión de proyecto, supervisión, sensibilización y desarrollo de políticas. Posteriormente, la Secretaría y la ONUDI acordaron costos adicionales generales de 7 885 000 $EUA, incluido el componente de gestión de proyecto, con un costo de 700 000 $EUA que representa 9,74% del componente de inversión. La parte de inversión del presupuesto es igual a 7 185 000 $EUA, con una relación de costo a eficacia de 5,00 $EUA/kg. Los costos de apoyo de organismo son 192 800 $EUA para la ONUDI, calculado con el 7,5% y 520 000 $EUA para el Gobierno del Japón, calculado con el 13%.

130. El proyecto de acuerdo entre el Gobierno de China y el Comité Ejecutivo para la eliminación completa de las sustancias del Grupo I del Anexo A en el sector de servicio y mantenimiento de refrigeración se recibió en la Secretaría del Fondo el 29 de octubre de 2004. La Secretaría consultó a la ONUDI acerca de la metodología de verificación independiente de los límites de consumo y los objetivos de verificación estipulados en el proyecto de acuerdo. La ONUDI aclaró que la verificación del consumo en el sector de servicio y mantenimiento de refrigeración estaría sujeta a que el Gobierno de China proporcionara datos completos sobre el

consumo de CFC en los restantes sectores de fabricación. La ONUDI y el Gobierno de China han analizado esta metodología. Considerando el vínculo entre el plan de eliminación para el sector de servicio y mantenimiento de refrigeración y el plan para la eliminación acelerada de los CFC en cuanto a la supervisión de los objetivos de reducción, la preparación del proyecto de acuerdo y la redacción de la recomendación dependen de la finalización del documento de evaluación del plan para la eliminación acelerada de los CFC a ser presentado al Comité Ejecutivo. Se notificará al Comité Ejecutivo según corresponda.

RECOMENDACIÓN

131. Pendiente.

INFORME SOBRE LA MARCHA DE LAS ACTIVIDADES DE LA EJECUCIÓN DEL PLAN PARA EL SECTOR DE SOLVENTES PARA LA ELIMINACION DE LAS SAO EN CHINA PARA 2003/2004 Y PROGRAMA DE EJECUCIÓN ANUAL PARA 2005

DESCRIPCIÓN DEL PROYECTO

Antecedentes

132. En nombre del gobierno de China, el PNUD presentó a la 44ª Reunión del Comité Ejecutivo el informe sobre la marcha de las actividades para 2004 y el programa de ejecución para 2005 del plan para el sector de solventes para la eliminación de las SAO en China. Al igual que con los tramos anteriores, la financiación para el programa de ejecución anual para 2005, de 5 9761 625 $EUA incluidos los costos de apoyo, no se solicita en esta reunión sino que se incluirá en el plan administrativo del PNUD para 2005.

133. El plan para el sector de solventes de China fue aprobado en principio en la 30ª Reunión a un costo total de 52 $EUA millones. Se han aprobado fondos por un total de 31 345 000 $EUA para los primeros cinco tramos anuales desde 2000 hasta 2004 inclusive.

134. La eliminación se está logrando por medio de una combinación de actividades de inversión dirigidas a empresas específicas y un programa de asistencia técnica para empresas más pequeñas administrado mediante un sistema de comprobantes. Los límites de consumo se están manteniendo por medio de la regulación de la producción y la importación. Las reducciones de la producción se controlan en el marco de los planes de eliminación para el sector de producción de CFC y CTC. El uso de CTC como solvente para limpieza está prohibido desde el 1° de junio de 2003.

Eliminación a partir de proyectos y actividades de inversión

135. La SEPA y el PNUD continuaron ejecutando actividades de eliminación en el nivel de las empresas por medio de contratos de reducción de SAO iniciados en 2001, 2002 y 2003, así como de las nuevas actividades dentro del sistema de comprobantes y los mecanismos de reembolso retroactivo y autoeliminación gradual iniciados en 2003.

Actividades de eliminación de SAO en 2003

136. Conforme a lo requerido en el Acuerdo, China debe eliminar 550 toneladas PAO de CFC-113, y 78 toneladas PAO de TCA para fines de 2004. Se han finalizado las actividades de eliminación en 12 empresas y se han firmado contratos de reducción de SAO en noviembre de 2003 para eliminar 223 toneladas PAO de CFC-113 y 1,5 tonelada PAO de TCA.

137. Por medio del sistema de comprobantes, 71 empresas pequeñas y medianas han se han inscripto para eliminar 142,37 toneladas PAO de CFC-113 y 8,21 toneladas PAO de TCA en 2004.

138. Además de los contratos de reducción de SAO y el sistema de comprobantes, China ha firmado acuerdos con 143 empresas que realizarían en forma directa la eliminación gradual del consumo de CFC-113 en 2004 y 2005 y la eliminación de TCA a realizarse entre 2004 y 2009. Los acuerdos firmados en 2003 eliminarían un total de 109,9 toneladas PAO de CFC-113 y 28,2 toneladas PAO de TCA que contribuirían a los objetivos de eliminación de 2004. En general, se eliminaría un total de 475,3 toneladas PAO de CFC-113 y 37,9 toneladas PAO de TCA con las actividades finalizadas en 2003.

139. La situación provocada por la epidemia de SRAG en el primer semestre de 2003 causó demoras en el programa de 2003. Sin embargo, como resultado de los mecanismos de reembolsos retroactivos y autoeliminación, ya se han registrado 142,1 toneladas PAO de CFC-113 y 37,9 toneladas PAO de TCA como contribución a los objetivos de eliminación de 2003.

Actividades de eliminación de SAO en 2004

140. Tal como se estipula en el Acuerdo, China debe eliminar 550 toneladas PAO de CFC-113 y 85 toneladas PAO de TCA en 2005. Las actividades de eliminación de SAO de 2004 lograrán la eliminación por medio de una combinación de contratos de reducción de SAO, el sistema de comprobantes, el sistema de reembolsos retroactivos y las reducciones de consumo a ser logradas en 2005 por las empresas que firmaron contratos de autoeliminación gradual en 2003.

141. La Tabla 3 del proyecto presentado por el PNUD, que se reproduce a continuación, presenta un resumen de los progresos logrados en la eliminación por medio de actividades de inversión.

Tabla 3: Eliminación por medio de los mecanismos de contratos de reducción de SAO, sistema de comprobantes, reembolsos retroactivos y autoeliminación

			CFC-113 (toneladas PAO)	**TCA (toneladas PAO)**	**CTC (toneladas PAO)**	**Cant. de empresas**	**Financiación (1 000 $EUA)**
2000	Contratos para eliminación futura	Planificada	372,8	10	0	10 – 20	5 000
		Firmada	378,4	10,1	8,36	16	4 132
	eliminación lograda	Proyectos en curso	-	7,4	-		
		Total eliminado en 2000	-	7,4	-		
2001	Contratos para eliminación futura	Planificada	524	10	0	10 – 20	5 505
		Firmada	541,6	10,6	0	21	4 361
	eliminación lograda	Proyectos en curso	54,1	-			
		Contratos de 2000	340,1	9,8	8,36		
		Total eliminado en 2001	394,2	9,8	8,36		

			CFC-113 (toneladas PAO)	TCA (toneladas PAO)	CTC (toneladas PAO)	Cant. de empresas	Financiación (1 000 $EUA)
2002	Contratos para eliminación futura	Planificada	500	25	55	20 – 40	5 830
		Firmada	535,8	43,2	17,94	32	4 004
	Eliminación lograda	Proyectos en curso	291,3	41,7			
		Contratos de 2000	38,4	0,4	-		
		Contratos de 2001	-	-			
		Total eliminado en 2002	329,7	42,1	-		
2003	Actividades para eliminación futura	Planificada	600	78	55	120-140	5 255
		Firmada	475,3	37,9	0	226	5 100
	Eliminación lograda	Proyectos en curso	-	-	-		
		Contratos de 2001	336,3	7,3			
		Contratos de 2002	-	-	-		
		Actividades de 2003 *	142,1	37,9			
		Total eliminado en 2003	478,4	45,2	-		
2004	Actividades para eliminación futura	Planificada	550	85	-		$4 000
		Firmada	767,3	119,7		216	$4 729
	Eliminación lograda	Contratos de 2001	205,3	3,3			
		Contratos de 2002 +	108,6	18,3	16,5		
		Actividades de 2003					
		Actividades de 2004 *	49,4	9,8			
		Total eliminado en 2004	363,3	31,4	17,94		
Total acumulado en los cinco años	Eliminación planificada		2 546,8	208	110		
	Objetivos de eliminación		2 750	197	110		
	Eliminación a lograr por medio de la terminación de los proyectos en curso y los contratos firmados		2 698,4	221,5	26,3		
	Eliminación real de SAO lograda +		1 565,6	135,9	26,3		

* De actividades de reembolsos retroactivos y autoeliminación gradual
\+ Eliminación lograda a septiembre de 2004

142. El PNUD ha indicado que la diferencia entre la eliminación planificada y la eliminación real se debe a:

- Demoras para registrar la eliminación real lograda hasta que no se hubieran llevado a cabo todos los procedimientos administrativos necesarios para considerar terminado un proyecto

- Eliminación gradual durante la ejecución, antes de la terminación del proyecto, con lo que las reducciones de consumo en el nivel nacional son mayores que la eliminación registrada en el nivel de las empresas.

Sistema de comprobantes

143. La aplicación del sistema de comprobantes se inició en junio de 2003 como una prueba piloto con tres agentes de ejecución intermedios en las provincias de Chengdu, Guangzhou y Shaanxi. Desde entonces, la red se ha ampliado a 8 agentes de ejecución intermedios, y la cantidad de EPM que se han inscripto para participar, que aumentó de 71 en 2003 y a 167 en 2004, indica el éxito que ha logrado. A partir de 2005, el sistema de comprobantes se convertirá en un importante mecanismo para llegar a los consumidores de solventes con SAO más pequeños.

Medidas de políticas

144. Desde la ejecución del plan para el sector de solventes en marzo de 2000, China ha iniciado y aplicado eficazmente medidas de políticas para controlar los cupos de producción así como las ventas de CFC-113, TCA y CTC para uso como solventes. Sobre la base de la experiencia obtenida en 2002, la Asociación de Cooperación Técnica de Ingeniería de Limpieza de China (CCETCA) emitió certificados de uso de SAO para productores y consumidores de SAO para el período desde agosto hasta diciembre de 2003. En diciembre de 2003 se emitieron certificados de uso con un nivel que cumpliría con los objetivos de eliminación para 2004. Además, esta notificación también requiere que los fabricantes, distribuidores e importadores de SAO suministren a la CCETCA información sobre producción, venta y consumo de SAO y los nombres de todos los usuarios.

145. El 13 septiembre de 2004, la SEPA emitió un “Aviso sobre alternativas recomendadas (primera lista) para la eliminación de SAO” para todos los sectores, incluido el sector de solventes.

Actividades de asistencia técnica

146. En junio de 2003 se realizaron actividades de capacitación para expertos nacionales, agentes de ejecución intermedios y empresas candidatas, que se repitieron para otros participantes en 2004. Además, también se condujo capacitación para los auditores independientes que llevaron a cabo la auditoría financiera y de gestión, así como la verificación del desempeño.

147. Se continuó con los experimentos sobre tecnologías de alternativa y pruebas a escala de producción y se desarrollaron las normas para las aplicaciones de limpieza sin SAO. Se está preparando una estrategia general para los solventes de alternativa. La disponibilidad de solventes de alternativa de buena calidad producidos en el país a precios razonables es un requisito crítico para asegurar una eliminación sin problemas. A este fin, China continuará investigando y facilitando el desarrollo de de alternativa fabricadas en el país.

148. El plan para el sector de solventes se promocionó en medios impresos, radio y televisión. Se está usando activamente un sitio Web para promocionar la ejecución de las actividades de eliminación de SAO, dar publicidad a las políticas importantes, los calendarios de eliminación y las tecnologías de alternativa y permitir que se compartan tecnologías entre expertos nacionales, internacionales y de las empresas. En agosto de 2004 se organizó el segundo Foro y Exposición Internacional de Tecnologías de Limpieza en Shangai.

Verificación de los objetivos de eliminación de 2003

149. Según los datos y estadísticas oficiales obtenidos por la SEPA, el consumo nacional total de CFC-113 y TCA en 2003 ha cumplido los objetivos de eliminación especificados en la Tabla A del Acuerdo. Las cifras de producción de CFC son idénticas a los datos auditados informados en el Plan para el sector de producción de CFC presentado por el Banco Mundial al Comité Ejecutivo. Los datos de importación y exportación se obtuvieron de los registros oficiales de la aduana. Sobre la base de un muestreo estadístico idéntico al aplicado para todos los informes anuales anteriores, se determinó que el nivel nacional de consumo de CTC para solventes de limpieza era de 5,53 toneladas PAO. Esta cifra guarda conformidad con la prohibición del consumo de CTC para solventes de limpieza, que entró en vigencia el 1° de junio de 2003. Resulta razonable determinar que el nivel de consumo nacional de CTC como solvente para limpieza en 2003 no excedió el límite de 55 toneladas PAO.

150. Estas cifras se verificaron por medio de una auditoría realizada por una firma de auditoría independiente, Beijing Tian Hua Zheng Certified Public Accountants Co. Ltd., contratada por la SEPA y el PNUD. Los auditores basaron la auditoría sobre el Informe de auditoría de la Oficina Nacional de Auditoría de China sobre producción de CFC-113, los datos oficiales del gobierno sobre importación y exportación y la muestra estadística de empresas que eran potenciales usuarios de CTC antes mencionada. La metodología aplicada fue similar a la aplicada para las auditorías de verificación del desempeño anteriores.

151. El consumo nacional de CFC-113, TCA y CTC en 2003 se presenta en la Tabla 4 del proyecto presentado por el PNUD, que se reproduce a continuación.

Tabla 4: Consumo de solventes con SAO para el año 2003 (toneladas PAO)

	CFC-113	**TCA**	**CTC**
	Toneladas PAO	**Toneladas PAO**	**Toneladas PAO**
Objetivo de control de consumo	**1 700**	**580**	**55**
Producción	1699,94	86,8	
Importación	-	250,0	
Exportación	23,2	-	
Uso como materia prima	0	0	
Consumo de solventes	**1 676,74**	**336,8**	**<55**

152. Tal como se requiere en el Acuerdo, los nombres de todas las empresas que usan CTC como materia prima, como agente de proceso o para otras aplicaciones no aprobadas aún como agentes de proceso con SAO, y las cantidades usadas por cada una en 2003, se incluyeron en el informe sobre la marcha de las actividades. La cantidad total fue de 45 041 toneladas PAO, que se encuentra dentro del límite de 71 500 toneladas PAO especificado.

153. Se consumieron 17,1 toneladas PAO de CFC-113 en total como agente de proceso y 383 toneladas PAO como producto químico intermedio para la fabricación de CFC-115. El Acuerdo estipula que el límite de uso de CFC-113 como materia prima es de 10 toneladas PAO. El PNUD indicó que China ya había notificado a la 42ª Reunión del Comité Ejecutivo que el objetivo de las limitaciones para asegurar que "el CFC-113 no sea desviado para el uso como solvente" fue verificado en el Informe del sector de producción de CFC, en el que se confirma que las cantidades totales se usaron como agente de proceso y producto químico intermedio, conforme a lo estipulado.

Auditorías de desempeño

154. Los auditores también examinaron la ejecución de las actividades de eliminación y la eliminación lograda en 2003 en el nivel de las empresas y la ejecución de otras actividades técnicas y sobre políticas.

155. En el nivel de las empresas, el informe de verificación del desempeño identificó los principales motivos de las demoras en la ejecución, que incluyeron insatisfacción respecto de los solventes de alternativa elegidos. El auditor recomendó que las partes pertinentes proporcionaran apoyo continuo para resolver el problema y destacó la necesidad de disponer de solventes de alternativa de buena calidad producidos en el país, a precios razonables. Sin embargo, los auditores también reconocieron las reducciones anuales en el consumo de SAO en el nivel de las empresas en 2002, 2003 y los primeros siete meses de 2004, y opinaron que, en términos generales, el consumo general disminuyó año por año y que las actividades de eliminación se estaban ejecutando conforme a lo previsto.

156. La verificación del desempeño también confirmó la ejecución de actividades de políticas y de asistencia técnica y señaló que todas las empresas que usan solventes con SAO cuentan con licencias y compran solventes con SAO conforme a sus cupos, lo que indica que la política aplicada por el SEPA ha arrojado buenos resultados. Además, también señaló que las 21 empresas remanentes que consumen CTC dejaron de consumir CTC como solvente para limpieza bastante tiempo antes de la fecha de entrada en vigencia de la prohibición, el 1° de junio de 2003, lo que indicaba que la medida de política también era eficaz.

Auditoría técnica

157. En septiembre de 2004, el equipo de expertos internacionales y nacionales del sector de solventes del PNUD realizó una evaluación técnica de ocho de las 32 empresas comprendidas en los contratos de reducción de SAO de 2002. El equipo determinó que las ocho empresas habían sufrido demoras en la compra de los equipos y señaló que la duración de proyecto convencional de 18 meses no resultaba posible para los proyectos más complejos. Los auditores técnicos hicieron recomendaciones acerca de la necesidad de: mejorar las comunicaciones para la

especificación y construcción de los nuevos equipos, continuar con la transferencia de tecnología después de la eliminación, documentar los desarrollos de diseño y asegurar la eficacia de los solventes de alternativa menos costosos.

Programa anual de ejecución para 2005

158. El Gobierno de China también ha presentado para el examen y la aprobación del Comité Ejecutivo el programa de ejecución anual para 2005. Se propone eliminar 550 toneladas PAO de CFC-113 y 85 toneladas PAO de TCA, que contribuirán a los límites de control de consumo para 2005 especificados en el acuerdo. Las actividades de eliminación iniciadas en 2003 y 2004 también contribuirán a los objetivos de eliminación para 2005. Con la reducción de 550 toneladas PAO de CFC-113, China eliminará completamente el consumo de CFC-113 como solvente para limpieza para el 1° de enero 2006. A fin de cumplir con este objetivo, se iniciarán las actividades a principios de 2005.

159. Las actividades de asistencia técnica, medidas legislativas y los mecanismos de supervisión y aplicación necesarios también se incluyen en el programa de ejecución anual para 2005. Cubren fortalecimiento de la capacitación sobre gestión financiera y administrativa para las empresas que participarán en las actividades de eliminación a fin de asegurar el uso apropiado de los fondos del Fondo Multilateral y la gestión eficiente de los subproyectos. Además, se fortalecerán las funciones de supervisión y vigilancia del Grupo de trabajo de solventes.

160. Las actividades de inversión y asistencia técnica propuestas para 2005 se indican en las tablas siguientes.

Actividades de eliminación	**Cantidad a ser eliminada**			
	CFC-113 (toneladas PAO)	**TCA (toneladas PAO)**	**CTC (toneladas PAO)**	**Cant. de empresas**
Terminación de los contratos de reducción de SAO de 2002 - Puesta en marcha y destrucción de equipos básicos en 2 empresas remanentes antes de mayo de 2005	133,8	9,4	-	2
Terminación de los contratos de reducción de SAO (12), sistema de comprobantes (71 EPM), autoeliminación gradual (143) y mecanismo de reembolso de 2003 - adquisición, entrega, instalación, puesta en marcha y destrucción completa de equipos básicos en 12 empresas comprendidas en los contratos de reducción de SAO de 2003; - Terminación de las actividades de eliminación en las 71 EPM comprendidas en el sistema de comprobantes; - Verificación de la reducción de solventes convenida en 143 empresas que firmaron acuerdos para la eliminación gradual; - Identificación de las empresas que completaron actividades de eliminación a su propio costo, verificación de la admisibilidad y cantidad de eliminación y proceso de reembolsos retroactivos	333,2	-	-	226

Actividades de eliminación	Cantidad a ser eliminada			
	CFC-113 (toneladas PAO)	**TCA (toneladas PAO)**	**CTC (toneladas PAO)**	**Cant. de empresas**
Continuación de las actividades de eliminación de 2004: 31 contratos de reducción de SAO, 167 empresas en el sistema de comprobantes y 18 en el mecanismo de reembolsos retroactivos: - adquisición, entrega, instalación, puesta en marcha y destrucción completa de equipos básicos; - Actividades de eliminación completadas dentro del sistema de comprobantes; - Verificación de la reducción de solventes convenida en 167 empresas que firmaron acuerdos para la eliminación gradual; - Verificación de la admisibilidad y cantidades de eliminación y proceso de reembolsos retroactivos	767,3	119,7	-	216
Inicio de las actividades de eliminación de 2005 - Identificación de consumidores de TCA y de todos los consumidores de CFC-113 restantes que participarán en actividades de eliminación por medio del sistema de comprobantes y el mecanismo de reembolsos retroactivos; - Continuación de identificación de empresas para la autoeliminación gradual y finalización de los acuerdos	*	*		
Eliminación total a ser lograda en 2005	**1 234,3**	**214,1**	**-**	
Objetivos de eliminación en 2005	**550**	**85**	**0**	

** Actividades de eliminación de 2005 para lograr la eliminación de 550 toneladas PAO de CFC-113 y 85 toneladas PAO de TCA en 2006.*

Actividades de asistencia técnica	Descripción	
Creación de un Centro Nacional de Capacitación sobre eliminación de SAO y aplicaciones de limpieza sin SAO en el sector de solventes	Objetivo	Capacitación sobre aplicaciones de limpieza y solventes sin SAO
	Grupo objetivo	Personal técnico de las empresas, expertos nacionales, profesionales
	Impacto	Mejores conocimientos sobre las aplicaciones de limpieza sin SAO disponibles
Sensibilización del público	Objetivo	Introducir y dar publicidad a la eliminación de SAO en el sector de solventes en todo el país para atraer atención y participación
	Grupo especificado	Pequeños consumidores de solventes en empresas tanto formales como informales
	Impacto	Aumento de la sensibilización e interés en participar
Apoyo del uso de solventes de alternativa	Objetivo	Asegurar los resultados de las actividades de eliminación y evitar que las empresas vuelvan al uso de SAO después de la terminación
	Grupo especificado	Empresas convertidas a limpieza sin SAO y empresas con posibilidades de participar en actividades de eliminación
	Impacto	Conversión sin SAO sostenida
Estudio sobre los usos esenciales	Objetivo	Abordar la demanda de sustitutos de alternativa después de 2010
	Grupo especificado	Instituciones de investigación y empresas que requieren el uso esencial de determinados solventes con SAO
	Impacto	Gestión eficiente del uso esencial de SAO
Programa contra la importación ilícita, la producción ilícita y el consumo ilícito de SAO	Objetivo	Asegurar una supervisión y aplicación eficaz del uso de SAO
	Grupo especificado	Oficinas de protección del medio ambiente locales, autoridades aduaneras
	Impacto	Mecanismo eficaz para abordar la producción y el uso de SAO ilícitos

Estudio sobre tecnologías sustitutivas para aplicaciones de limpieza de equipos médicos	Objetivo	Adquirir tecnología sobre aplicaciones de limpieza sin SAO en el sector
	Grupo especificado	Instituciones, expertos y empresas del subsector
	Impacto	Facilitar la conversión sin problemas y satisfactoria a limpieza sin SAO
Estudio sobre alternativas para el desarrollo de aplicaciones de limpieza de tableros de circuitos impresos	Objetivo	Abordar la demanda de productos sustitutivos para la limpieza de tableros de circuitos impresos
	Grupo especificado	empresas de electrónica que deben realizar la conversión a limpieza sin SAO
	Impacto	Conversión sin SAO sostenida

Presupuesto para 2005

161. El monto total solicitado para el programa de ejecución anual para 2005 es de 5 680 000 $EUA más costos de apoyo de 426 000 $EUA para el PNUD. En la propuesta presentada, se solicita la aprobación del tramo para 2005 a la 44ª Reunión del Comité Ejecutivo. Posteriormente, la Secretaría aclaró al PNUD que, conforme a la práctica aplicada anteriormente y al Acuerdo, la financiación se debía solicitar a la primera reunión de 2005,es decir, a la 45ª Reunión. A continuación se indica el desglose de los gastos.

Actividad	**Gastos previstos ($EUA)**
Actividades de eliminación en el nivel de las empresas - Sistema de comprobantes, reembolsos retroactivos y mecanismo de autoeliminación gradual	4 280 000
Asistencia técnica - Centro nacional de capacitación (500 000 $EUA) - Sensibilización del público (100 000 $EUA) - Apoyo para el uso de solventes de alternativa (100 000 $EUA) - Estudio sobre los usos esenciales (20 000 $EUA) - Programa contra la importación ilícita, la producción ilícita y el consumo ilícito de SAO (350 000 $EUA) - Normas y especificaciones técnicas (100 000 $EUA) - Estudio sobre alternativas para los tableros de circuitos impresos (100 000 $EUA) - capacitación y auditoría del desempeño (30 000 $EUA) - Expertos técnicos internacionales y nacionales (100 000 $EUA)	1 400 000
TOTAL	**5 680 000**

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

162. Según la información proporcionada en el informe sobre la marcha de las actividades, incluida la auditoría de verificación, China ha cumplido con los límites especificados en el acuerdo para el CFC-113, el TCA y el CTC. China también ha ejecutado una parte sustancial de las actividades del programa de asistencia técnica y sobre políticas previsto en el programa de ejecución anual para 2004. Por lo tanto, se han cumplido los principales requisitos de desempeño estipulados en el Acuerdo.

163. La eliminación real lograda en el nivel de las empresas continúa siendo mucho más baja que la planificada. El informe sobre la marcha de las actividades anual indica los motivos de esas cifras y las auditorías técnicas y de desempeño realizadas por la SEPA y China han formulado recomendaciones sobre las cuestiones técnicas y de ejecución pertinentes. Al igual que en años anteriores, la eliminación más baja que la planificada en el nivel de las empresas no ha afectado la capacidad de China de cumplir con sus límites de consumo.

164. El uso de CFC-113 como materia prima o producto químico intermedio continúa excediendo el nivel de 10 toneladas PAO también estipulado en el acuerdo. China ha indicado que explicó en el informe a la 42ª Reunión del Comité Ejecutivo que el objetivo de la limitación del uso como materia prima de asegurar que "el CFC-113 no sea desviado para el uso como solvente" ha sido verificado por el informe sobre el sector de producción de CFC. La financiación para el tramo de 2004 fue aprobada en la 42ª Reunión sobre la base de este dato.

165. El plan de ejecución anual para 2005 proporciona los datos requeridos de límites de consumo, objetivos de eliminación programa por programa y medidas del gobierno. Se proporciona un desglose de presupuesto para los programas de asistencia técnica. No se ha incluido una tabla separada sobre los indicadores de desempeño anteriormente usada en los programas anuales e informes para este proyecto. La información contenida en la misma duplica la información proporcionada en la Tabla 3 sobre eliminación en el nivel de las empresas y en la descripción de las medidas de asistencia técnica y del gobierno, y la tabla ya no es un elemento esencial en estos informes.

RECOMENDACIONES

166. El Comité Ejecutivo puede considerar oportuno tomar nota con beneplácito del informe sobre la marcha de las actividades del Gobierno de China y el PNUD acerca de la ejecución del plan para el sector de solventes para la eliminación de las SAO en China para 2004/2004 y aprobar el programa de ejecución anual para 2005, cuya financiación se solicitará en la 45ª Reunión.

Report On Foam Sector 2004 Annual Program Verification Mission

July 2004

Purpose of verification

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

Target of verification

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

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

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

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

Scope of verification

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

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

Result of verification

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

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

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

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

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

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

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

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

Dalian Zhongshan Insulation Pipe Plant

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 2. 1999 Zhongshan Procurement Record of CFC-11

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

Dalian Zhongda Refrigeration Equipment Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 3. 1999 Zhongda Procurement Record of CFC-11

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

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

Dalian Xingsheng Insulation Material Plant

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 4. 1999 Xingsheng CFC-11 Procurement Record

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

Lushun Insulation Material Plant

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 5. 1999 Lushun CFC-11 Procurement Record

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

Dalian Binshan Group Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 6. 1999 Bingshan Procurement Record of Preblended Polyol

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

DEDZ Polyurethane Foam Corporation

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Table 7. 1999 DEDZ CFC-11 procurement Record

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

Dalian Fishing Machinery Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

Beijing Zhonghai Runda Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

Beijing Xinxing Tiandi Insulation Material Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

Beijing Direct Insulation Pipe Plant

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

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

Hebei Jiangfeng Pipe Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

Tianjin Xiatong Refrigeration Equipment Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

Tianjin Yuesheng New Material Research Institute

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

24	合计	81.5*		

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

Tianjin Lifeng Development Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

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

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

Chengde Hongxing Refrigeration Equipment Co. Ltd.

Enterprise Background

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

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

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

Verification

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

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

Conclusion

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

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

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

CFC-11 PHASEOUT IN THE POLYURETHANE CHINA FOAM SECTOR

2005 ANNUAL PROGRAM

MP PROJECT MANAGEMENT OFFICE
STATE ENVIRONMENTAL PROTECTION AGENCY, CHINA

AND

THE WORLD BANK

September 30, 2004

Data Sheet

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

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

TABLE OF CONTENTS

Introduction

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

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

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

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

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

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

Part A

IMPLEMENTATION STATUS OF THE 2002-2004 ANNUAL PROGRAMS

Policy and Government Actions

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

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

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

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

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

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

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

Enterprise Phaseout Activities

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

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

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

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

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

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

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

Technical Assistance Activities

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

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

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

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

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

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

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

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

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

PART B

2005 ANNUAL PROGRAM

Phaseout Targets

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

Program Activities in 2005

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 2: 2005 Annual Program

(Amount in US$ Million)

Please revise the "policy measures" part

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

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

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

Table 2: 2005 Annual Program (cont.')

(Amount in US$ million)

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

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

Annex 1

Implementation Status of Enterprise Activities under 2002 - 2004 Annual Programs

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Annex 3 Technical Assistance Activities, 2002-2004

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2005 ANNUAL PROGRAM

August 27, 2004

Data Sheet

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

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

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Introduction

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

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

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

Annual Phaseout Targets and Funding Level

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

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

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

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

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

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

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

Implementation Status of 2004 Annual Program

Activities and Progress in 2004

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

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

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

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

6. Policy actions in 2004 include:

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

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

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

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

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

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

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

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

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

(1) CTC production sector: 8 contracts.

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

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

Table 2: CTC production contract and reduction

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

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

(2) PA sector: 10 contracts.

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

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

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

Table 3: Contract list with PA enterprises

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Programmed Activities In 2005

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 4: Targets under 2005 Annual Program

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

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

Table 5: Policy Actions and Enterprise activities in 2005

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

Table 6: Technical Assistance Activities in 2005

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

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

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

No.	Enterprise Name	Type of CTC production facility	Capacity in 2001* (MT/year)	CTC Production Recorded				Status
				2001	2002	2003	2004 (Jan-June)	
CTC-1	Luzhou North Chemical Industrial Co., Ltd.	Co-production	3,000	2,106	2,318	2,105	1,143	Producing
CTC-2	Zhejiang Quhua Flurochemical Co. Ltd.	Co-production	20,000 (22,250)	16,204	17,217	16,204	8,305	Producing
CTC-3	Liaoning Panjin No. 3 Chemical Plant	Dedicated	3,000	0	0	0	0	Dismantled in May 2004
CTC-4	Chongqing Tianxuan Chemical Co., Ltd.	Dedicated	4,400	2,100	3,067	870	0	Dismantled in Dec 2003
CTC-5	Chongqing Tiansheng Chemical Co. Ltd	Distilling	500	245	195	130	8	Producing
CTC-6	Chongqing Tianyuan Chemical General Plant	Dedicated	9,000	8,009	8,198	6,114	1,337	Stopped
CTC-7	Taiyuan Chemical Industrial Co., Ltd.	Dedicated	4,000	0	0	0	0	To be dismantled in 2004
CTC-8	Luzhou Xinfu Chemical Industry Co. Ltd.	Dedicated	8,000	6,903	7,754	5,203	2,048	Producing
CTC-9	Jiangsu Meilan Chemical Co., Ltd.	Co-production	3,500 (10,000)	703	2,929	3,396	1,602	Producing
CTC-10	Guangzhou Hoton Chemical (Group) Co., Ltd.	co-production	5,000	0	0	0	0	Closed and Dismantled in 1997
CTC-11	Sichuan Honghe Fine Chemical Co., Ltd.	Co-production	4000	3,451	21,018	13,763	7,750	Producing
		Dedicated	16,000 (17,750)	13,806				Producing
CTC-12	Shanghai Chlor-Alkali Chemical Co., Ltd.	Co-production	10,000	7,209	9,192	7,209	3,289	Producing

Annex I

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

No.	Enterprise Name	Type of CTC production facility	Capacity in 2001* (MT/year)	CTC Production Recorded				Status
				2001	2002	2003	2004 (Jan-June)	
CTC-13	Quzhou Jiuzhou Chemical Co., Ltd.	Distilling	1,000	596	477	594	222	Producing
CTC-14	Wuxi Greenapple Chemical Co., Ltd.	Co-production	0 (2,000)	0	0	495	558	Producing
CTC-15	Shandong Jinling Chemical Co., Ltd.	Co-production	0 (2,000)	0	0	148	831	Producing
CTC-16	Shandong Dongyue Chemical Co., Ltd.	Co-production	0 (2,500)	0	0	0	0	Will start production in September 2004
CTC-17	Jinan 3F Fluorochemical Co., Ltd.	Dedicated	4000	0	0	0	0	Dismantled in July 2004
Total (ODS tons)			95,400 (112,400)	61,332	72,365	56,231	27,085	
Total (ODP tons)				67,465	79,602	59,860**	29,794	

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

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

Annex II

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

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

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

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

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

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

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

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

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

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

ANNEX III

Technical Assistance Activities (2003-2004)

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

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

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

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

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

THE CFC PRODUCTION SECTOR

CHINA

2005 ANNUAL PROGRAM

October 7, 2004

Data Sheet

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

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

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Introduction

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

PART A

IMPLEMENTATION STATUS OF PREVIOUS YEARS' ANNUAL PROGRAMS

As of June 2004

Phaseout Target

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

Enterprise Phaseout Activities

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

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

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

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

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

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

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

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

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

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

Implementation of Policy Instruments

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

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

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

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

Technical Assistance Activities

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

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

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

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

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

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

Other activities (former Special initiatives)

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

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

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

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

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

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

Plants producing HCFC-22 in China

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

PART B

2005 ANNUAL PROGRAM

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

Program Activities during the Year

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

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

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

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

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

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

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

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

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

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

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

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

Table B.1: 2005 Annual Program

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

[1] Per Agreement

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

Table B.1: 2005 Annual Program (continued)

(Amount in US$ million)

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Annex 2

Updated List of HCFC-22 producing plants in China

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

Notes:

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

Annex 3

Technical Assistance Activities, 1999-2004

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Annex 4

Other Activities, 1999-2004

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

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

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

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

THE HALON SECTOR

2005 ANNUAL PROGRAM

August 2004

Data Sheet

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

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

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The Halon Sector
2005 Annual Program

BACKGROUND

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

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

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

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

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

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

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

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

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

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

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

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

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

Part A

Implementation Status Of Previous Annual Programs

1998-2003 Annual Programs

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

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

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

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

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

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

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

Other enterprise-level phaseout activities

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

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

Technical assistance (TA) aactivities

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

Special Initiatives

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

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

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

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

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

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

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

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

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

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

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

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

2004 Annual Program

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

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

Enterprise-level phaseout activities

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

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

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

Special initiatives

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

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

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

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

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

Technical assistance activities

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

PART B
2005 ANNUAL PROGRAM

Objectives

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

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

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

Policy instruments during the Year

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

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

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

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

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

Enterprise-level activities

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

Technical assistance (TA) activities

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

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

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

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

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

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

Table BI. 2005 Annual Program

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

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

Table BI: 2005 Annual Program (Contd.)

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

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

Table BII: 2005 Annual Program-Technical Assistance Activities

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

Table BIII: 2005 Annual Program - Proposed Performance Indicators

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

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

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

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

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

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

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

ANNEX II
Closures of halon production facilities and lines

A. 1998 Annual Program

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

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

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

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

B. 1999 Annual Program

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

C. 2000 Annual Program

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

D. 2001 Annual Program

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

E. 2002 Annual Program

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

F. 2003 Annual Program

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

ANNEX III
List of beneficiary fire extinguisher manufacturers

A. 1998 Annual Program

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

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

B. 1999 Annual Program

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

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

C. 2000 Annual Program

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

D. 2001 Annual Program

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

E. 2002 Annual Program

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

F. 2003 Annual Program

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

ANNEX IV
List of beneficiary fire fix system manufacturers

A. 1998 Annual Program

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

B. 1999 Annual Program

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

C. 2000 Annual Program

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

D. 2001 Annual Program

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

E. 2003 Annual Program

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

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

ANNEX V

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

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

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

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

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

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

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

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

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

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

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

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

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

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

ANNEX VI

Special Initiatives

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