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COMITÉ EJECUTIVO DEL FONDO MULTILATERAL
PARA LA APLICACIÓN DEL
PROTOCOLO DE MONTREAL
Cuadragésima Primera Reunión
Montreal, 17 al 19 de diciembre de 2003

PROPUESTA DE PROYECTO: TURQUÍA

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

Fumigantes

- Eliminación de metilbromuro en cultivos protegidos de tomates, pepinos y claveles (segundo tramo) — ONUDI

Eliminación

- Plan para la eliminación total de los CFC: Programa anual para 2004 — Banco Mundial

Solventes

- Plan para la eliminación de las SAO en el sector de solventes — ONUDI

HOJA DE EVALUACIÓN DEL PROYECTO
TURQUÍA

SECTOR: Fumigantes Uso de SAO en el sector (2002): 280,8 toneladas PAO

Umbrales de relación de costo a eficacia del subsector: n/d

Título del proyecto:

a) Eliminación de metilbromuro en cultivos protegidos de tomates, pepinos y claveles (segundo tramo)

Datos del proyecto	**Eliminación de metilbromuro**
Consumo de la empresa (toneladas PAO)	
Impacto del proyecto (toneladas PAO)	58
Duración del proyecto (meses)	12
Monto inicial solicitado ($EUA)	1 000 000
Costo final del proyecto ($EUA):	
Costo adicional de capital (a)	
Costo de imprevistos (b)	
Costo adicional de explotación (c)	
Costo total del proyecto (a+b+c)	1 000 000
Propiedad local (%)	100%
Componente de exportación (%)	0%
Monto solicitado ($EUA)	1 000 000
Relación de costo a eficacia ($EUA /kg)	29,20
¿Financiación de contraparte confirmada?	
Organismo nacional de coordinación	Ministerio del Medio Ambiente
Organismo de ejecución	ONUDI

Recomendaciones de la Secretaría	
Monto recomendado ($EUA)	1 000 000
Impacto del proyecto (toneladas PAO)	58
Relación de costo a eficacia ($EUA /kg)	29,20
Costo de apoyo del organismo de ejecución ($EUA)	75 000
Costo total al Fondo Multilateral ($EUA)	1 075 000

DESCRIPCIÓN DEL PROYECTO

1. El Comité Ejecutivo, en su 31ª Reunión, aprobó $EUA 479 040 (Banco Mundial) como fondos totales que se pondrán a disposición de Turquía para lograr la eliminación total del metilbromuro usado el sector de higos secos (30 toneladas PAO). En la 35ª Reunión, el Comité Ejecutivo aprobó en principio un monto adicional de $EUA 3 408 844 (ONUDI) como fondos totales que estarán a disposición de Turquía para lograr la eliminación total del metilbromuro usado en cultivos protegidos de tomates, pepinos y claveles (otras 292,2 toneladas PAO), y asignó $EUA 1 000 000 a la ONUDI para el primer tramo, con el que se eliminarían 29,2 toneladas PAO.

2. En 2002, el Gobierno de Turquía notificó, conforme al Artículo 7, un consumo total de metilbromuro de 280,8 toneladas PAO, lo cual está por debajo del nivel máximo de consumo de metilbromuro acordado entre el Gobierno y el Comité Ejecutivo (293,4 toneladas PAO).

3. Según la información presentada en el informe sobre la marcha de las actividades, se han ejecutado las siguientes actividades en Turquía:

Fecha	**Actividad**
27-28 de febrero de 2003	Reunión general con todo el personal del proyecto de eliminación de metilbromuro (45 personas)
5 de marzo de 2003	**Se estableció una oficina para el metilbromuro en el Citrus and Greenhouse Crops Research Institute (CGCRI) en Antalya**
23 de junio de 2003	Cambio del coordinador del proyecto y algunos componentes del proyecto (aumento del personal, creación de un centro de computación para el análisis de datos y la presentación de informes, y aumento del programa de capacitación para incluir a todos los usuarios de metilbromuro en la fumigación de suelos del país)
26 de junio de 2003	Reunión en el CGCRI acerca de los avances del proyecto de metilbromuro, selección de personal y creación de grupos especiales (educación, equipos de computación y análisis)
1º de julio de 2003	Entrevista preliminar con el personal del CGCRI para determinar el nuevo personal del proyecto
7 de julio de 2004	Evaluación de solicitudes y campos de experiencia del personal del CGCRI
15 de julio de 2004	Diseño de especificaciones de las herramientas y equipos
1-2 de septiembre de 2003	Reunión general con todo el personal del proyecto en el CGCRI
16 de septiembre de 2003	Envío de formularios de cuestionarios a las provincias
22 de septiembre de 2003	Entrevistas con los productores en Adana y Mersin
1-8 de octubre de 2003	Capacitación en Adana, Muğla y Antalya
10 de octubre de 2003	Entrevistas con los productores en Antalya y Muğla

4. El Gobierno de Turquía ha presentado una solicitud de financiación para la ejecución de la segunda etapa del proyecto para cultivos protegidos de tomates, pepinos y claveles. La ONUDI solicita $EUA 1 000 000 para eliminar otras 58,0 toneladas PAO de metilbromuro. Las

principales actividades de eliminación propuestas incluyen: continuación de biofumigación y productos químicos de alternativa ($EUA 305 000), inyección de fertilizantes ($EUA 25 000), introducción de solarización ($EUA 150 000), pasteurización al vapor ($EUA 220 000) y capacitación ($EUA 200 000). Los $EUA 100 000 restantes se reservarán para actividades adicionales en la segunda etapa del proyecto.

COMENTARIOS Y RECOMENDACIÓN DE LA SECRETARÍA

COMENTARIOS

5. En 2001, el Gobierno de Turquía notificó un consumo de 227,4 toneladas PAO. En 2002, el consumo de metilbromuro aumentó a 292,8 toneladas PAO (según los datos notificados en el informe sobre la marcha de las actividades). Al respecto, la Secretaría solicitó a la ONUDI una aclaración del aumento del consumo de metilbromuro. La ONUDI indicó que, aparentemente, hay cierta confusión, ya que la cifra de 292,8 toneladas PAO es el consumo notificado para 2000 en el sector de flores cortadas y vegetales. En el período entre el 1º de enero y el 15 de octubre, se importaron a Turquía un total de 163,7 toneladas PAO de metilbromuro. Para fines de 2003, no se permitirá la importación de metilbromuro excepto para aplicaciones de cuarentena y previas al envío.

6. Según el informe sobre la marcha de las actividades, la Secretaría señaló que las actividades ejecutadas hasta ahora se relacionan más con la capacitación y la sensibilización del público que con las actividades de inversión para la eliminación. También se informa que el personal del proyecto aumentó de 35 a 67 personas y que se había establecido un centro de computación para crear una base de datos adecuada y completa. Si bien el proyecto se aprobó en la inteligencia de que, entre otras cosas, “Turquía contará con flexibilidad para ejecutar los componentes del proyecto que considere más importante para cumplir con sus compromisos de eliminación”, la Secretaría solicitó a la ONUDI una aclaración acerca de las actividades reales llevadas a cabo para la eliminación real de metilbromuro (tipo de equipos comprados, superficie convertida a tecnologías alternativas y cantidad de agricultores que usan tecnología alternativas).

7. Posteriormente, la ONUDI informó a la Secretaría que, a pesar de que algunos de los elementos solicitados por la organización que ejecuta el proyecto no estaban previstos en el documento del mismo, el Gobierno de Turquía utilizó la autorización para contar con flexibilidad para pedir equipos que consideraba indispensables para la ejecución y supervisión adecuadas del proyecto (ej. computadoras para la presentación de informes diarios, equipos de análisis para obtener información sobre la contaminación del suelo y el éxito de los tratamientos, y equipos para educación y sensibilización).

8. Respecto del componente de personal del proyecto, la ONUDI informó a la Secretaría que este componente se requiere debido a la necesidad de cubrir todas las zonas de Turquía pertinentes, según las necesidades evaluadas por el Ministerio de Agricultura. La ONUDI estuvo completamente de acuerdo en que el componente de personal modificado cambia sustancialmente las líneas presupuestarias previstas en el documento de proyecto; sin embargo, responde a las necesidades identificadas en el terreno.

RECOMENDACIÓN

9. La Secretaría del Fondo recomienda la aprobación general de la propuesta de proyecto con los costos de apoyo relacionados y los niveles de financiación indicados en la Tabla siguiente:

	Título del proyecto	Financiación del proyecto ($EUA)	Costo de apoyo ($EUA)	Organismo de ejecución
a)	Eliminación de metilbromuro en cultivos protegidos de tomates, pepinos y claveles (segundo tramo)	1 000 000	75 000	ONUDI

HOJA DE EVALUACIÓN DEL PROYECTO
TURQUÍA

SECTOR: Eliminación Uso de SAO en el sector (2002): 698,9 toneladas PAO

Umbrales de relación de costo a eficacia del subsector: N/D

Títulos de los proyectos:

a) Plan para la eliminación total de los CFC: programa anual para 2004 (tercer tramo)

Datos del proyecto	**Múltiple**
	Plan nacional
Consumo de la empresa (toneladas PAO)	698,9*
Impacto del proyecto (toneladas PAO)	218,0**
Duración del proyecto (meses)	12
Monto inicial solicitado ($EUA)	1 000 000
Costo final del proyecto ($EUA):	
Costo adicional de capital (a)	
Costo de imprevistos (b)	
Costo adicional de explotación (c)	
Costo total del proyecto (a+b+c)	
Propiedad local (%)	100
Componente de exportación (%)	0
Monto solicitado para el tercer tramo ($EUA)	1 000 000
Relación de costo a eficacia ($EUA /kg)	
¿Financiación de contraparte confirmada?	
Organismo nacional de coordinación	Dependencia nacional del ozono
Organismo de ejecución	Banco Mundial

Recomendaciones de la Secretaría	
Monto recomendado ($EUA)	
Impacto del proyecto (toneladas PAO)	
Relación de costo a eficacia ($EUA /kg)	
Costo de apoyo del organismo de ejecución ($EUA)	
Costo total al Fondo Multilateral ($EUA)	

* Consumo básico de CFC de 2002 en Turquía notificado a la Secretaría del Ozono

** El impacto del tercer tramo es de 218,0 toneladas PAO.

DESCRIPCIÓN DEL PROYECTO

Programa de ejecución para 2003 del Plan nacional para la eliminación total de los CFC en Turquía

10. El Banco Mundial ha presentado para la consideración del Comité Ejecutivo un informe sobre la ejecución del Plan nacional para la eliminación total de los CFC en Turquía para el período de diciembre de 2002 a diciembre de 2003, combinado con una solicitud de aprobación del programa de ejecución anual para 2004 (adjunto a este documento).

11. El Acuerdo sobre la eliminación total de los CFC Turquía fue aprobado en la 35ª Reunión del Comité Ejecutivo en diciembre de 2001, con un costo total de $EUA 9,0 millones . En la misma reunión, el Comité Ejecutivo también aprobó un desembolso de $EUA 3,5 millones y costos de apoyo de organismo por $EUA 295 000 para la ejecución del programa anual para 2002, que cubría las actividades ejecutadas en 2002. En la 38ª Reunión de noviembre de 2002, el Comité Ejecutivo aprobó el programa de ejecución anual para 2003 con un nivel de $EUA 2 500 000 y costos de apoyo de organismo de $EUA 175 000 .

12. La Parte A del informe describe la situación de la ejecución del programa anual para 2003 en relación con las siguientes actividades:

a) Examen y fortalecimiento de las políticas y los reglamentos de eliminación existentes;

b) Emisión de cupos de importación de CFC para 2003 (se emitieron cupos para 2002 para importadores de conformidad con el proyecto de plan sectorial);

c) Continuación de la ejecución de los contratos firmados con empresas pequeñas y medianas (PYMES) de refrigeración comercial;

d) Continuación de la ejecución de la nueva capacitación en la industria de refrigeración conforme al contrato;

e) Continuación de la ejecución del programa de recuperación/reciclaje/regeneración conforme al contrato;

f) Comienzo de la capacitación de funcionarios de aduana;

g) Firma de contratos con compañías de enfriadores admisibles conforme a lo identificado en 2002 y 2003;

h) Comienzo del programa de retroadaptación para usuarios finales.

13. En la tabla siguiente se presenta un resumen financiero del programa para 2003:

Tabla de costos

Actividad	**Monto asignado para 2002 ($EUA)**	**Monto contratado (en 2002) ($EUA)**	**Monto asignado para 2003 ($EUA)**	**Monto contratado (a sept. de 2003) ($EUA)**	**Monto total asignado para 2002+2003 ($EUA)**	**Monto total contratado (a sept. de 2003) ($EUA)**
Programa para PYMES	1 800 000	1 390 770	250 000	217 530 100 000 [1]	2 050 000	1 608 300 100 000 [1]
Recuperación/reciclaje	600 000	1 527 484	1 100 000	10 500 100 000 [2]	1 700 000	1 537 984 100 000 [2]
Capacitación para aduanas			200 000	50 000 [3]	200 000	50 000 [3]
Sustitución de enfriadores	900 000	485 388	660 000	217 798 1 050 000 [4]	1 560 000	703 186 1 050 000 [4]
Usuario final		0	90 000	200 000 [5]	90 000	200 000 [5]
Actividades de capacitación	100 000	286 329	100 000		200 000	286 329
Programa de asistencia técnica/oficina de gestión del proyecto	100 000	84 373	100 000	65 000	200 000	149 373
Total	3 500 000	3 774 344	2 500 000	2 010 328	6 000 000	5 785 172

[1] Se prevé firmar otros contratos por un monto de $EUA 100 000 a fines de 2003 con las restantes PYMES.
[2] Se comprarán equipos adicionales por un monto de $EUA 100 000 en octubre de 2003, como se explica en el punto 3.
[3] Se prevé desembolsar a fines de 2003 para actividades y equipos de capacitación para aduanas.
[4] En octubre de 2003, se firmarán contratos por un monto de $EUA 1,05 millones para la sustitución de enfriadores, como se explica en el punto 5.
[5] Se firmarán contratos por un monto total de $EUA 200 000 a fines de 2003, como se explica en el punto 6.

14. El monto total de los contratos es de $EUA 5,784 millones a fines de septiembre 2003. Por lo tanto, el Banco Mundial considera que se han cumplido los objetivos de desempeño para 2003.

15. Se incluye un informe de verificación del consumo de CFC en Turquía en 2002 y 2003 como parte del informe sobre la marcha de las actividades. A continuación se reproducen los objetivos de control del consumo de CFC en 2002 y 2003 establecidos en el acuerdo, así como las importaciones notificadas.

	2002	**2003**
Límite de consumo de CFC-12 (toneladas PAO)	650	334
Importación notificada de CFC-12 (toneladas PAO)	635,2	257
Límite de consumo de CFC-11 (toneladas PAO)	250	200
Importación notificada de CFC-11 (toneladas PAO)	61,8	106,8
Límite de consumo de CFC-115 (toneladas PAO)	9	9
Importación notificada de CFC-115 (toneladas PAO)	2,7	N/D

16. El informe de verificación del auditor independiente sobre el consumo de CFC en Turquía en 2002 y 2003 arriba a la conclusión de que las importaciones fueron más bajas que los cupos emitidos de acuerdo con los límites de consumo establecidos en el acuerdo. Como ilustra la Tabla anterior, las importaciones de CFC-12 de 2002 (635,2 toneladas PAO) fueron muy similares al cupo emitido (650,0 toneladas PAO). Las importaciones de CFC-11 fueron significativamente más bajas que los cupos establecidos en 2002. Para 2003, se recopilaron datos para el período comprendido entre el 1º de enero de 2003 y el 31 de agosto de 2003. El Banco Mundial indicó que, en 2003, las importaciones no superarán los límites de consumo estipulados en el acuerdo.

17. El informe también proporciona información adicional relacionada con la ejecución del plan en diversos anexos.

Programa de ejecución para 2004

18. El programa anual de ejecución para 2004 se describe en la Parte B. Incluye referencias a los principales indicadores de desempeño: nivel máximo admisible de consumo de CFC y valor de los contratos firmados. También contiene una descripción de las actividades incluidas en el plan de ejecución para 2004, que se presentan en diversas secciones: políticas y reglamentos, cupos de importación, conversión de PYMES, capacitación adicional, esquema de recuperación y reciclaje, programa de sustitución de enfriadores, capacitación para aduanas, retroadaptación de usuarios finales y asistencia técnica y gestión de programas. El programa anual proporciona una Tabla de costos con un desglose del monto total a ser asignado para las diferentes actividades planificadas para 2004.

19. El Banco Mundial solicita la liberación de $EUA 1,0 millón para la ejecución del programa anual para 2004 de Turquía y costos de apoyo de organismo relacionados de $EUA 150 000.

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

20. La asignación de $EUA 1,0 millón para el programa de ejecución para 2004 guarda conformidad con el acuerdo, sujeto a la confirmación de que se han alcanzado los objetivos de eliminación acordados para el año anterior. Se ha verificado que las actividades previstas para el año anterior se llevaron a cabo de acuerdo con el primer programa anual de ejecución.

21. El plan de ejecución para 2003 presentado por el Banco Mundial a la Secretaría en enero de 2002 incluye una afirmación que estipula que se requería que los contratos que representen 80% ($EUA 1,6 millones) del monto disponible ($EUA 2,0 millones) se debían firmar antes de la aprobación del plan de ejecución para 2004. La información suministrada en la Tabla que se reproduce en el párrafo 4 anterior indica que se espera que los contratos, que ascienden a $EUA 1 350 000, se firmen hacia fines de 2003. Esto representa 54% de la financiación asignada. Se pidió al Banco Mundial que aclarara los progresos logrados. Desde entonces, la Secretaría ha

recibido confirmación del Banco Mundial de que todos los contratos pendientes estarían firmados en diciembre de 2003.

22. La información sobre los cupos establecidos, importación, existencias y ventas se incluye en el informe de verificación (adjunto al informe sobre la marcha de las actividades). La comparación de los límites de consumo de CFC establecidos y las importaciones de CFC notificadas sugiere que se han cumplido los objetivos de reducción. El informe de verificación proporciona información sobre existencias, importaciones totales, otras adquisiciones y saldos para las compañías que importan CFC. Hay saldos positivos y negativos, lo que puede deberse a inexactitudes de contabilidad y adquisiciones de CFC a compañías subsidiarias, tal como se explica en el informe. Sin embargo, los datos de la Tabla 9 del informe indican que las ventas de CFC-12 de Sentinel durante ocho meses de 2003 fueron de 81,9 toneladas, lo que excede significativamente el cupo establecido de 39,6 toneladas. La Secretaría solicitó aclaraciones al Banco Mundial respecto de esta cuestión. Se ha notificado a la Secretaría que el saldo de Sentinel probablemente refleje adquisiciones no registradas de su compañía subsidiaria y otras fuentes del mercado interno. Se cree que, al cierre del saldo de adquisiciones y ventas para el año 2003, esta diferencia será asentada legítimamente.

23. La Secretaría pidió información adicional sobre las modalidades de ejecución aplicadas por el Banco Mundial en relación con las modalidades formuladas en la propuesta (enfoque de arrendamiento de equipos para las PYMES: enfoque de contrato basado en el desempeño para las actividades de recuperación/reciclaje/regeneración, fondo renovable para programas de enfriadores y retroadaptación). El Banco Mundial aclaró que no se podía usar el enfoque de arrendamiento de equipos para las PYMES, ya que dichas empresas se mostraban reacias a cooperar en las condiciones de arrendamiento. Los contratos para la distribución de equipos de recuperación y reciclaje se basarán en el desempeño. Se ha aplicado un enfoque de fondo renovable en la ejecución de diversos componentes del plan de eliminación de CFC.

RECOMENDACIÓN

24. El Comité Ejecutivo puede estimar oportuno considerar la aprobación del programa de ejecución anual para 2004 de Turquía, con el nivel programado de $EUA 1 000 000 más $EUA 150 000 en costos de apoyo de organismo para el Banco Mundial.

HOJA DE EVALUACIÓN DE PROYECTO
TURQUÍA

SECTOR: Solventes Uso de SAO en el sector (2000-2002): 86,7 toneladas PAO

Umbrales de relación de costo a eficacia del subsector: n/d

Título del proyecto:

a) Plan para la eliminación de las SAO en el sector de solventes

Datos del proyecto	**Solventes**
	Plan de eliminación
Consumo de la empresa (toneladas PAO)	
Impacto del proyecto (toneladas PAO)	70
Duración del proyecto (meses)	36
Monto inicial solicitado ($EUA)	2 423 303
Costo final del proyecto ($EUA):	
Costo adicional de capital (a)	2 021 690
Costo de imprevistos (b)	173 019
Costo adicional de explotación (c)	228 594
Costo total del proyecto (a+b+c)	2 423 303
Propiedad local (%)	100%
Componente de exportación (%)	0
Monto solicitado ($EUA)	2 423 303
Relación de costo a eficacia ($EUA /kg)	35
¿Financiación de contraparte confirmada?	n/d
Organismo nacional de coordinación	Dependencia nacional del ozono
Organismo de ejecución	ONUDI

Recomendaciones de la Secretaría	
Monto recomendado ($EUA) Impacto del proyecto (toneladas PAO) Relación de costo a eficacia ($EUA /kg) Costo de apoyo del organismo de ejecución ($EUA)	
Costo total al Fondo Multilateral ($EUA)	

DESCRIPCIÓN DEL PROYECTO

25. El Gobierno de Turquía ha presentado un plan nacional de eliminación para solventes con SAO (a saber, CFC-113, TCA y tetracloruro de carbono) (plan de solventes) a la consideración del Comité Ejecutivo en la 41ª Reunión.

Consumo de solventes con SAO

26. El consumo de solventes con SAO de Turquía ha variado con el correr de los años. La Tabla siguiente presenta el consumo de CFC-113, 1,1,1, tricloroetano o metilcloroformo (TCA), tetracloruro de carbono (CTC) y bromoclorometano (BCM) para el período 1997-2002 notificado por el Gobierno de Turquía conforme al Artículo 7.

SAO	Consumo (toneladas PAO)					
	1997	1998	1999	2000	2001	2002
CFC-113	4,8	10,4	0,8	0,0	0,2	0,1
TCA	8,7	45,8	44	0	11,4	10,8
CTC	70,4	168,3	90,1	0,3	16,0	13,2
BCM						21,4

27. Según el plan de solventes, una compañía (Beta Proses) usó 5,9 toneladas PAO de CFC-113 y 2,1 toneladas PAO de TCA en la producción de desengrasantes para metales y productos de limpieza en aerosol. A principios de 2003, la empresa convirtió su línea de producción a tecnologías sin SAO (la compañía solicita financiación para la conversión en forma retroactiva).

28. El tetracloruro de carbono se usa en Turquía en la producción de extintores de incendios a base de tetracloruro de carbono en una empresa (Oknal). Se calcula que el consumo anual en 2002 de tetracloruro de carbono de la empresa fue de 27,9 toneladas PAO, mientras que el consumo medio para el período 2000-2002 se calcula que fue de 18,6 toneladas PAO. La capacidad instalada para las instalaciones de extintores de incendios de 5 kg a base de tetracloruro de carbono es de 10 000 unidades por año. También se usa una muy pequeña cantidad de tetracloruro de carbono en aplicaciones para laboratorios.

29. El TCA se usaba en el pasado ampliamente en la industria textil y de indumentaria. Sin embargo, desde la introducción del sistema de cupos de SAO, el precio del TCA ha aumentado. Como consecuencia, se ha sustituido el TCA por tricloroetileno en muchas aplicaciones.

30. Sobre la base del estudio realizado para la preparación del plan de solventes, nueve compañías del sector industrial textil y de indumentaria notificaron un consumo total de 15,8 toneladas PAO de TCA (siete de las nueve empresas consumen menos de 0,3 kg PAO de TCA por año, con un total de 0,763 toneladas PAO para las siete empresas). Se agregó un 30 por ciento adicional (4,7 toneladas PAO) al consumo calculado a fin de cubrir los usos de las PYMES.

31. Recientemente, se identificó que dos empresas usaban bromoclorometano (BCM) como agente de proceso para la producción de sultamicilina tosilato, un derivado de la penicilina

semisintético. Una compañía comenzó sus operaciones en 2002 y, por lo tanto, no se la consideró admisible para la financiación.

Proyectos de solventes con SAO aprobados hasta ahora

32. Hasta ahora, el Comité Ejecutivo ha aprobado la financiación de la eliminación de 13,0 toneladas PAO de CFC-113 y 25,3 toneladas PAO de TCA en Turquía. A diciembre de 2002, de este consumo total, aún restaban eliminar 15,4 toneladas PAO de TCA y, por lo tanto, se deben restar del consumo de TCA remanente que debe abordarse. El consumo de TCA remanente que debe abordarse en los proyectos aprobados es más alto que el consumo de TCA notificado para 2002.

Tecnologías alternativas y costos adicionales

33. El componente de inversión del plan de solventes se ejecutaría mediante una combinación de subproyectos individuales y grupales. Se calculó que el costo general del plan de solventes sería de $EUA 2 131 803 (a $EUA 33,28/kg), distribuidos como sigue:

a) Beta Proses ya ha convertido su línea de producción al sector de solventes sin SAO. Se calcula que el costo estimativo de la conversión (solicitada en forma retroactiva) es de $EUA 196 665 (a $EUA 24,67/kg);

b) Para la eliminación de TCA en la industria textil y de indumentaria, se usó el factor de costo a eficacia de $EUA 38,5/kg para el TCA para calcular el costo de la conversión, dado que se incluye a diversos pequeños usuarios y las inversiones individuales requeridas generalmente superan el valor de este umbral. Sobre esta base, se calculó que el costo de la conversión fue de $EUA 792 792.

c) Para la eliminación de tetracloruro de carbono en la producción de extintores de incendios, la compañía propuso el uso de extintores de incendios de espuma con una sobrecarga integrada de dióxido de carbono como la solución que menos daña el medio ambiente y más eficiente (un extintor de incendios de espuma de 9 kg es equivalente a un extintor de incendios de tetracloruro de carbono de 5 kg en cuanto a su capacidad de extinción de incendios). Para lograr esta conversión, se requerirán cilindros más grandes para los extintores (10 litros), un tanque de fibra de vidrio de polietileno reforzado, plantas de llenado de espuma y dióxido de carbono y equipos auxiliares. El costo total de la conversión se calculó en $EUA 155 599 incluidos $EUA 102 953 de costos de explotación para un año (a $EUA 8,37/kg); y

d) Ante la falta de experiencia en la eliminación del bromoclorometano, el costo de la conversión se basó en la relación de costo a eficacia del proyecto aprobado para la eliminación de tetracloruro de carbono en la síntesis de bromuro de 2-nitrobencilo por clorobenceno (India), y aplicando un factor de escala de aumento de 6/10, dado que la cantidad de bromoclorometano se usa en un orden de magnitud más alto ($EUA 58,60/kg). Sobre esta base, se calculó que el costo de la conversión fue de $EUA 986 824.

Gestión del plan sectorial

34. La gestión general del plan sectorial estará a cargo de la ONUDI. La Dependencia del ozono sería responsable de supervisar la ejecución de las actividades propuestas en el plan de solventes, hacer un seguimiento de la imposición de las políticas y leyes sobre SAO pertinentes y brindar asistencia a la ONUDI para la preparación de los planes anuales de ejecución y los informes sobre la marcha de las actividades al Comité Ejecutivo.

35. Los componentes de inversión del plan de solventes se ejecutarían con una combinación de subproyectos individuales y de grupo.

36. El primer plan anual consta de los siguientes componentes clave:

a) Creación de un mecanismo operacional para la gestión y la supervisión del plan de solventes;

b) Redacción de mandatos y planes de trabajo detallados para los componentes de apoyo técnico y de políticas y gestión;

c) Creación de un mecanismo operacional para la participación en el plan de solventes y la formulación de compromisos de eliminación de las empresas;

d) Un taller para actividades de capacitación y fortalecimiento de la capacidad para los interesados del gobierno y la industria y los responsables de las decisiones;

e) Un taller de asistencia tecnológica para las empresas participantes

f) Un taller de sensibilización del público y divulgación de información.

COMENTARIOS Y RECOMENDACIONES DE LA SECRETARÍA

COMENTARIOS

Consumos básicos de referencia para el tetracloruro de carbono y el TCA

37. Los consumos básicos de referencia de tetracloruro de carbono y TCA para el cumplimiento de Turquía son 86,0 toneladas PAO y 29,9 toneladas PAO, respectivamente; por lo tanto, los niveles máximos permisibles de consumo de tetracloruro de carbono y TCA en 2005 serán de 12,9 toneladas PAO y 20,9 toneladas PAO respectivamente. El consumo actual (2002) de tetracloruro de carbono (10,8 toneladas PAO) y TCA (13,2 toneladas PAO) ya se encuentra por debajo de los objetivos de eliminación para 2005. Se eliminarán otras 15,4 toneladas PAO de TCA con los proyectos aprobados pero aún no ejecutados.

Cuestiones relacionadas con el consumo de SAO

38. La Secretaría tomó nota de que los niveles de eliminación de tetracloruro de carbono y TCA propuestos para la financiación en el plan sectorial superan los niveles de consumo en 2002 notificados por el Gobierno de Turquía. En el caso del tetracloruro de carbono, por ejemplo, el consumo declarado por Oknal (extintores de incendios) aumentó de 11 toneladas PAO en 2000 a 25,3 toneladas PAO en 2002; del mismo modo, el consumo de bromoclorometano en Mustafa Nevzat aumentó de 4,6 toneladas PAO en 2000 a 16,2 toneladas PAO en 2002. La ONUDI indicó que la reciente crisis monetaria y económica de Turquía causó cierta inestabilidad entre las empresas del país. Muchas firmas habían postergado sus compras de extintores de incendios de tetracloruro de carbono, de manera que las existencias de tetracloruro de carbono se incluyeron en el consumo calculado para 2002. Otras compañías interrumpieron sus actividades de fabricación, con lo que el consumo de SAO se redujo de manera correspondiente.

39. Respecto del consumo de TCA, la Secretaría señaló que parece ser que el consumo identificado declarado (15,8 toneladas PAO) fue aumentado en un supuesto 30 por ciento (4,7 toneladas PAO) para cubrir a empresas de pequeña escala no identificadas. El consumo declarado en las empresas identificadas ya es más alto que el consumo notificado antes del aumento de 30 por ciento. La ONUDI indicó que su cálculo de consumo se basó en este estudio y el hecho de que las cámaras de comercio y otros varios fabricantes mencionaron potenciales usos adicionales de TCA. Sostuvo que se confirmó que el consumo mencionado en el plan se debía en gran parte a existencias acumuladas y, por lo tanto, no aparecería en los informes de consumo conforme al Artículo 7.

Financiación retroactiva

40. El plan de solventes incluye financiación retroactiva para los costos adicionales de eliminación de CFC-113 y el consumo de TCA residual en Beta Proses. La Secretaría pidió información adicional respecto de la corroboración del consumo básico de la empresas antes de la conversión, la tecnología y los equipos instalados y sus costos, así como la base de los costos adicionales de explotación declarados. Se solicitó aclaración acerca de si el propulsor usando con CFC-113 y TCA antes de la conversión era a base de CFC o si la empresa ya había cambiado al uso de propulsor a base de hidrocarburos (HAP) y continuaba usando CFC-113 y TCA como ingredientes activos. En este último caso, el equipo ya habría sido diseñado para el llenado de sustancias inflamables. Al respecto, la ONUDI indicó que la compañía ya había recibido financiación del Fondo Multilateral a través del Banco Mundial para el componente de aerosol.

41. La Secretaría señaló que otros proyectos similares aprobados por el Comité Ejecutivo se habían considerado proyectos de aerosoles, aún cuando se llenan los botes con CFC-113 y/o TCA como ingredientes activos, con un umbral de costo a eficacia de $EUA 4,40/kg. Sobre esta base, el nivel máximo admisible de financiación para Beta Proses es de $EUA 35 000.

Proyectos de extintores de incendios de tetracloruro de carbono

42. El plan sectorial indica que Oknal es el único usuario de tetracloruro de carbono como agente de extintores de incendios. Como tal, el proyecto debería constituir el proyecto definitivo de la industria de protección contra incendios, dado que Turquía ya ha recibido un proyecto de

banco de halones y, por medio de ese proyecto, indicó que no se presentarían otros proyectos para el sector de halones.

43. La descomposición química del tetracloruro de carbono cuando entra en contacto con el calor y los metales calientes, y su afinidad con el monóxido de carbono, que producía un derivado letal peligroso para la salud dio origen a su rápida eliminación. Al respecto, la Secretaría solicitó que se confirmara si los extintores de incendios de tetracloruro de carbono eran legales en Turquía. La ONUDI confirmó que Oknal contaba con una licencia para fabricar extintores de incendios de tetracloruro de carbono.

44. La Secretaría señaló que el umbral de costo a eficacia para los extintores de incendios es $EUA 1,48/kg. Por lo tanto, el nivel máximo de financiación admisible para este tipo de proyecto basada en el consumo indicado en la propuesta sería de $EUA 27 528. La ONUDI indicó que el umbral se estableció para los extintores de incendios de halones y, por lo tanto, no se debería aplicar a los extintores de incendios de tetracloruro de carbono.

45. La Secretaría del Fondo también identificó otras cuestiones relacionadas con el costo de los cilindros y la cantidad de meses utilizados en el cálculo de los costos de explotación. Estas cuestiones siguen todavía en discusión.

TCA para empresas textiles

46. La Secretaría también pidió datos adicionales para las empresas textiles con consumo de TCA a fin de establecer la admisibilidad de las mismas (ej. fechas de creación de la capacidad de producción y configuración de su consumo básico) y los costos adicionales declarados para las empresas (a $EUA 38,5/kg). La Secretaría señaló que, en proyectos aprobados anteriores, se proporcionó un valor nominal de $EUA 500 por empresa para mejoras de la ventilación u otras mejoras similares en el lugar de trabajo para facilitar el uso de solventes para limpieza de manchas de alternativa, o una modesta asistencia técnica para la ventilación y la especificación de los solventes a fin de facilitar la eliminación.

47. Al respecto, la ONUDI indicó que el plan sectorial propone suministrar un escape a las estaciones de limpieza de los fabricantes de indumentaria a un costo de $EUA 12 000 a fin de usar mezclas de hidrocarburos especialmente desarrolladas. Para dos de las compañías, el plan incluye equipos de limpieza de alta potencia especialmente diseñados y una máquina de lavar, con un costo total de $EUA 800 000.

48. La Secretaría señala que, dado que el consumo más reciente (2002) de TCA notificado es de 10,8 toneladas PAO y que los proyectos aprobados pero no aún ejecutados eliminarán 15,4 toneladas de TCA, no parece restar más eliminación de TCA admisible para Turquía. La financiación declarada para el sector textil parecería constituir un caso de doble contabilización.

Usos controlados de bromoclorometano

49. Turquía ratificó las Enmiendas de Montreal y Beijing del Protocolo de Montreal el 10 de octubre de 2003.

50. La Secretaría señaló que el bromoclorometano no se ha incluido en el Anexo A de la Decisión X/14 de las Partes; por lo tanto, todas las cantidades consumidas se deberían considerar materia prima. En este sentido, el componente de bromoclorometano del plan de solventes ($EUA 986 824) no es admisible para la financiación o la inclusión en el plan sectorial. La Secretaría también señaló que las Partes del Protocolo de Montreal, en su 15ª Reunión, consideraron el uso de bromoclorometano como un uso controlado de agente de proceso para la producción de losartán potásico (esta aplicación será considerada nuevamente en la 17ª Reunión de las Partes).

Gestión del proyecto

51. La Secretaría señaló que el programa de apoyo técnico que se propone para incluir un aspecto reglamentario del gobierno, tal como normas y certificación, más el componente de apoyo para políticas y gestión representan en conjunto 7,3 por ciento de los costos de los componentes de inversión propuestos. Este proyecto es parte del programa nacional de eliminación de SAO de Turquía, cuyo componente de CFC ya ha sido aprobado, con inclusión de financiación para aspectos institucionales y de gestión.

52. Al respecto, se pidió a la ONUDI que indicara en qué medida el aspecto de gestión de este proyecto se coordinaría con aquellos similares del programa de CFC y aprovecharía la experiencia de gestión ya establecida. La ONUDI indicó que el Gobierno de Turquía requería $EUA 198 000 para la gestión del proyecto.

53. La Secretaría del Fondo y la ONUDI aún están deliberando acerca de cuestiones relacionadas con el proyecto, incluido el consumo y los costos adicionales admisibles. Se comunicarán a la 41ª Reunión los resultados de dichas deliberaciones.

RECOMENDACIÓN

Pendiente.

REFRIGERATION SECTOR PLAN TURKEY

2004 ANNUAL PROGRAM

TECHNOLOGY DEVELOPMENT FOUNDATION OF TURKEY
(TTGV), NATIONAL OZONE UNIT (NOU) AND

THE WORLD BANK

November 24, 2003

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VERIFICATION REPORT FOR THE CFC CONSUMPTION IN TURKEY FOR 2002 & 2003

Introduction

1. In accordance with the Executive Committee's approval of the "Agreement for Turkey, Refrigeration Sector Plan (RSP)" (**Error! Unknown document property name.**, Decision and Annex), Government of Turkey is hereby requesting release of the **third tranche of US$ 1.0 million** for the implementation of the 2004 Annual Program. With this funding, CFC consumption will be limited as per figures given Agreement for Turkey. (**Error! Unknown document property name.**, Decision and Annex). Details of the 2004 annual program are provided in Section B.

2. Within the Sector Plan, Turkey agreed to the following control targets for CFC-11 consumption in the PU foam sector.

National Control Targets of Turkey for CFC-11, CFC-12 and CFC-115 consumption in ODP tones

	1999 Baseline	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Maximum allowable CFC-12 consumption (ODP tonnes)	736	700	650	334	166	100	0	0	0	0
Maximum allowable CFC-11 consumption (ODP tonnes)	1,049	300	250	200	150	50	0	0	0	0
Maximum allowable CFC-115 consumption (ODP tonnes)	9	9	9	0	0	0	0	0	0	0
Max allowable total ODP (ODP tonnes)		977	909	534	316	150	0	0	0	0
Total agreed funding (US $ million)		3.5	2.5	1	0.75	0.75	0.5	0	0	0
Agency support costs (US $ million)		0.295	0.175	0.150	0.045	0.03	0.03	0.03	0.03	0.025

Part A

Implementation Status of the 2003 Annual Program
(As the end of September, 2003)

1. Introduction

The refrigeration sector was approved in December 2001. 2002 implementation has been executed as per implementation plan 2002 with some corrections and a status report has been submitted. The second implementation Plan covers the period from December 2002 through December 31, 2003. All targets set by the sector plan after its approval in December 2001.

Taking into account the short time available to reduce the import to zero, a number of activities had to be initiated already in 2002 and 2003 in order to ensure the impact in 2004 and onward.

This second annual plan consists of the following key components: a) review and strengthening of existing phase-out policies and regulations; b) issuance of CFC import quotas for 2003 (quotas for 2002 were issued to importers consistent with the draft sector plan); c) continue the implementation of signed contracts with SME commercial refrigeration companies; d) continue the implementation re-training of the refrigeration industry as per contracted; e) continue the implementation of the recovery/recycling/reclaim program as per contracted; f) start the training of customs officials; g) sign contracts with eligible chiller companies as identified during 2002 and 2003; and h) start the end user retrofit programme.

2. Time Period Covered

December 31 2002 – December 31, 2003

3. Performance Indicators

3.1 ODS Consumption

The maximum allowable CFC consumption in the refrigeration – and foams sector in 2003 is given in the table below.

ODS Substance	**Consumption in refrigeration – and foams sector**
	Year-2003
CFC-12	334
CFC-114 and CFC-115	0
CFC-11 consumption	200
Total ODP consumption	534

All figures in MT.

The release of the third tranche for the 2004 Implementation Plan to be approved at the last meeting in 2003 is contingent on the performance target for 2003 being met.

The 2004 implementation plan will be submitted at the third meeting in 2003 accompanied by a 2002/3 consumption verification report.

3.2 Contracts Signed

In accordance with the agreement between Turkey and the Executive Committee of the Multilateral Fund, the third performance indicator is the value of contracts signed.

It is required that contracts amounting to 80% (US$ 2.0 million) of the available amount (US$ 2.5 million) are signed before the approval of the 2004 Implementation Plan.

4 Implementation in 2003

RSP activities have been carried out during 2003 and the following summarizes the discussions and results: that the performance requirements for 2003 are met.

4.1 Policies and Regulations

In order to support the implementation of the sector plan, the policies and regulations in place, has been reviewed and evaluated in the context of the sector plan by MoEF. If necessary, implementations to amend existing policies, improve the enforcement the existing policies or initiate new policies has been taken.

Under the terms of the Montreal Protocol, Article 5 countries are permitted to continue to produce and consume CFCs and halons untill 2010. The problem of illegal trade in ODSs are significantly exacerbated for this reason and also there are numerous potential sources and it is difficult to detect ODS in transit. Illegal production is not, however, the only possible source of illegal consumption.

MoEF is believed that the most important thing is training than policies and enforcement. Since Turkey has very long border.. This is also not enough for preventing illegal trade. At the International level, MoEF is thought a meeting with her neighbor countries. All developing countries have to be included identification codes for originating plant and labelling systems for ODS-containing equipment. However, MoEF plans to cooperate with customs, security department and judicial authorities in the national level.

4.2 Import Quotas

Quotas are issued to eligible importers on an annual basis. Each importer is entitled to a quota based on his historical imports and adjusted so the aggregate import is within the allowed annual consumption. While the 2002 quotas have been managed in accordance with the approved sector plan, the 2003 quotas was issued during the first quarter of 2003 based on specific requests from the individual importers.

The import license and realized import amounts of CFC11, CFC12, and CFC502 were given in the Verification Report, Table 7.

4.3 SME Conversion

Around 300 companies were identified in 1997-98 when the RSP was prepared. These were interviewed in 1998, 2001 and also in June 2002. Of the initial 300 companies, 40 have shifted to other business. Furthermore around 100 companies refused participation, which leaves 147 companies for the project.

Detailed information for these companies were obtained and reviewed by a technical consultant.

According the RSP, TTGV obtained prices for standardized equipment and standard costs have been applied for grant allocations to the SMEs. Additional criteria were applied for evaluation of each SME. Attachment 2 describes the evaluation criteria applied to evaluate the SME's.

TTGV informed all known SMEs that were eligible for contracting, in 2002. Of these, 61 and 8 companies have signed contracts in 2002 and 2003, respectively. In total, 69 companies have signed contracts with TTGV for a total amount of 1.6 mill US$. as given in Attachment 1. As of September 2003, 1.0 mill US$ has been disbursed to SME's. Additional applications from some other SME's have been received and they will be evaluated in October 2003. Hence, further contracts amounting to 100,000 US$, will be signed ultimately, in 2003, with these SME's. The implementation of sub-projects has taken more time than expected. The reason is that implementation with larger companies is relatively smooth; implementation by smaller companies is more complicated due to lack of management capacity. It is expected, however, that the implementation of all of the sub-projects will be completed by the end of 2004.

4.4 Training

The first component of training was the train-the-trainer seminar. It was performed in 2002. The organization, KOSGEB, has been selected to manage the training as well as the recovery & recycling projects. The contract was signed at the end of October 2002. The total amount of training contract is 274.000 US$.

The training has experienced delays, which can be explained by the change of government in Turkey, subsequent uncertainty on management at KOSGEB and the slow procedure of contracting governmental organizations

Procurement of the equipment to be used for the practical training was started by KOSGEB and will be finalized early October 2003.

KOSGEB has cooperated with Ministry of Education (MoEdu) for the implementation of training programme. 30 teachers will work for training over all Turkey. KOSGEB has contracted an experienced trainer in Turkey, Mr. Nuri Özkol, to conduct the second train-the-trainer seminar. Training materials and handouts are almost ready.

The training programme prepared by KOSGEB and MoEdu is to include a one-day course for technicians servicing smaller refrigerating applications (domestic – and serial produced commercial appliances) and a 5-day course for technicians servicing larger installations. So the training – despite the delays – can be completed by the end of 2004.

The training programme will be implemented and spread widely throughout the Turkish Education System; and will be continued after 2004. The training programme will begin in late October 2003. The training programme is presented in Attachment 3.

30 teachers would also be introduced to the equipment procured for the recovery/recycling project during the second train-the-trainer seminar.

4.5 Recovery/ Recycling/ Reclaim (RRR)

The International Competitive Bidding (ICB) process for the equipment foreseen started during summer 2002. Bid opening was September 6, 2002. Bids were received from RTI (US), ITE (Belgium) and Ekotez (Czech Republic).

Bids have been evaluated and bid evaluation report has been sent to World Bank for no objection. As per the result of Bid evaluation report RTI has been awarded the contract amounting 1.527 mill. US$ by TTGV.

KOSGEB, has also been selected to manage the recovery & recycling projects. The contract was signed at the end of October 2002. The reclaim and recycling centers will be hosted by KOSGEB. Locations have been selected (3 reclaim centers and 24 recycling centers) according to the plan given in Attachment 4. Provision of training-related equipment is being overseen by TTGV.

The equipment from RTI arrived in Turkey in June 2003. It is currently in a warehouse west of Istanbul. The equipment was inspected and no damages were noticed. Further a rough counting verified the quantities. Finally the reclaim equipment were separated and marked for each reclaim center (Istanbul, Izmir and Ankara).

Installation of reclaim centers will be managed by the local RTI representative, PIAS, in Istanbul in October. The plan is, that for the first reclaim center (in Istanbul), PIAS will be assisted by a technical specialist from Germany representing RTI/Agramkow. The remaining two reclaim centers will be installed and commissioned by PIAS.

The Istanbul reclaim center will be located at ISISO (an association for companies involved in manufacture of refrigerating – and heating appliances). ISISO has 270 members and is located west of Istanbul, where all refrigeration companies are concentrated. A draft layout of the reclaim center is provided in Attachment 5.

The reclaim center requires a substantial amount of civil works. This includes also some equipment to facilitate the auxiliary requirements for the reclaim center. 36,000 US$ has been allocated for the civil works and required equipment.

The scope of civil works is expected to cover the following:

- Availability of sufficient electrical power (app. 35 kW);
- Water supply and drainage;
- Voltage regulation (to avoid fluctuations which are common in Turkey) and UPS for laboratory equipment (1 kW, 10 minutes backup);
- Installation of compressed air; and
- General refurbishment of the building.

It was also agreed to procure 27 vacuum pumps to be located at the recycling and reclaim centers. The procurement has been finalized and 27 vacuum pumps were purchased by TTGV from a Turkish company, Cantas, in June 2003.

Since operation and management of a recovery/recycling/reclaim scheme is new in Turkey, TTGV and KOSGEB made a study tour to Czech Republic, Hungary and Georgia, which have different recovery/recycling schemes already in operation in March and April 2003. The main issue is how to motivate the technicians to recover refrigerant and bring it to recycling/reclaim. The report is provided in Attachment 6.

It was decided to amend the scope of equipment for the reclaim centers to facilitate optimal operation.
Amendments relate to storage of contaminated refrigerant, operation of reclaim and cylinder washing units and quality check of reclaimed refrigerant.

- Originally it was foreseen to have a central storage of contaminated refrigerant in Istanbul. For this purpose 5 tanks, a pump and a scale has been purchased. However, this will imply transfer of cylinders from other parts of Turkey. Therefore it was decided to establish smaller storages at the reclaim centers in Ankara and Izmir as well. This will require additional 2 scales and 2 pumps. 3 tanks will be located in Istanbul and one tank in Ankara and Izmir.
- The reclaim unit can operate with both small cylinders and large tanks due to its high capacity. It is found to be more practical if operation is from large tanks to minimize cylinder handling and manpower for operation. This will require additional 2 tanks for each reclaim center (1 tank for CFC-12 and 1 for HCFC-22). The tanks should be equipped with internal float switch to avoid overfilling.
- Prior to cylinder washing the cylinder valve shall be dismantled. A special tool is required for this and such tool is not part of the supply from RTI. The tool can easily be manufactured locally. Further a pump is needed to pump the wastewater through the filtering system. This pump can also be found in local market.
- It was informed during the study tour, that technicians might doubt quality of reclaimed refrigerant and therefore hesitate using it. This will naturally hamper the scheme. It was therefore decided to provide quality certificate with each batch of reclaimed refrigerant (also an argument to operate reclaim unit from tanks rather than small cylinders). Gas chromatographs are purchased to verify chemical composition. However, it was decided to also purchase Karl Fisher titration equipment (for checking of moisture) and equipment to check for residual oil.

The total amendment and its budget is as follows:

• 2 x scales @ 3,000 US$	= 6,000 US$
• 2 x transfer pumps @ 6,000 US$	= 12,000 US$
• 6 x 1000 lbs tanks with level switch @ 1,000 US$	= 6,000 US$
• 3 x Karl Fisher titrators @ 12,000 US$	= 36,000 US$
• 3 x residual oil test equipment @ 333 US$	= 1,000 US$
• 3 x pump for wastewater @ 333 US$	= 1,000 US$
• 3 x tool for valve removal @ 333 US$	= 1,000 US$
TOTAL	= 63,000 US$

Procurement process for the equipment foreseen started during August 2003. It will be completed in early October 2003.

4.6 Customs training

Customs training is planned for 2003. A meeting was held at the end of January 2003 with MoEF and the Customs department in order to determine and agree strategy (phased implementation) and equipment needs.

After the meeting MoEF requested TTGV to only include customs training personnel from official ODS entry points. There are a total of 9 such personnel presently designated (5 x Istanbul, 2 x Izmit, 1 x Izmir and 1 x Ankara). This is considered insufficient, since illegal import/export likely will take place at unofficial customs points. However, the request of MoEF is considered phase I and training for officials at these 9 entry points is planned for early November 2003.

It was decided to purchase 25 refrigerant identifiers with total estimated costs of 40,000 US$. Procurement of refrigerant identifiers, which will be needed for the customs officials, has begun during August 2003. It will be completed in early October 2003.

Phase II of customs training – pending MoEF recommendations – is planned for 2004. This will be more comprehensive and cover all major entry points into Turkey. The second phase will also involve procurement of portable refrigerant identifiers.

4.7 Chiller Replacement

The chiller replacement component has also been accelerated, which turns out to be very beneficial, since the practical chiller replacement needs to take place during winter, where there is no need for cooling.

Since all chiller installations are different and have special features, it has been decided to select a number of chillers representing different applications. It is also a reference for the second round chiller replacement, in fall 2003.

First round chiller replacement criteria have been discussed and agreed. The criteria for first round are provided in Attachment 7.

Application forms have been prepared and sent to the initially selected 5 chiller owners. 3 application forms were received from chiller owners in November 2002. All have been evaluated and contracts amounting to around 710,000 $ were signed in January 2003. The mentioned contracts involved replacement of 6 chillers. As of September 2003, 0.69 mill US$ has been disbursed for the first 3 chiller projects.

A survey was conducted to identify additional CFC chiller installations during February-March 2003. So far, around 80 chillers are potential for coming rounds. The 80 chillers are located at around 50 companies. It was agreed to keep a high profile on environmental issues. This means that interim technologies such as HCFC are not to be considered. Further, energy savings should be kept at a maximum.

Methods / procedures for verification of energy savings were discussed and it was agreed to measure energy savings using the method applied to a similar project in Mexico. This required procurement of some instruments, non-intrusive flow meter, wattmeter and thermometers. The equipment, which cost around 13,000 US$, has been procured. The measured data was inserted into a simulation program and annual energy consumption was estimated. This has been done both with the old chillers and the new chillers. York International has provided the simulation software.

Lessons learned from the first round are:

- Timing is important, since chillers normally are to be replaced in off-season (winter);
- Support so far seems to be more than sufficient, and future support may be slightly reduced;
- Energy efficiency of new chillers has not been the main selection criteria for the participants. The timing factor may have influenced this, since it is of major importance that chillers are installed when cooling season starts.

Preliminary results of the verification from 3 chiller projects shows energy savings of around 20%, but more detailed calculations are required.

Two chiller seminars were conducted in Antalya and Istanbul in June 2003 to provide information about the chiller replacement project and to receive applications from potential chiller owners. Both seminars had 21 participants. The overall impression of the chiller seminars is that chiller owners are interested in such a fund for chiller replacement. Chiller suppliers also participated in the seminars.

Five application forms have been received from an additional 5 chiller owners in early September 2003. One chiller owner postponed its application to 2004. All have been evaluated and contracts amounting to around 1.05 $ will be signed in October 2003. One application has been rejected because the old chillers operate with R-22.

For the second round chiller replacement, preliminary selection criteria are based on the following:

- Application form from chiller owner including proposed financial support;
- Chiller age (according to ICF study chillers with age around 10 years will provide optimum cost effectiveness);
- Chiller type (centrifugal) and refrigerant (only CFC's); and
- Cost effectiveness. A cost effectiveness factor being based on chiller capacity, age and energy efficiency improvements has been formulated.

So, selection criteria have been revised according to the lessons learned as provided in Attachment 8.

4.8 End-user retrofit

As of September 2003 this activity has not started. KOSGEB training was a pre-condition for retrofits done by the SME's. Initially the retrofit cost needs to be verified. Therefore it has been agreed to contact the companies Klimasan and Ugur and offer them participation. Klimasan and Ugur were visited in August 2003 and potential participation in the project was discussed.

Klimasan and Ugur expressed interest and agreed to investigate the potential and provide information on service organization as well as retrofit costs mid October 2003.

It is planned that the total contract amounting 200,000 US$. will be signed with Klimasan and Ugur for retrofitting of its commercial refrigeration products late 2003.

It is also expected that KOSGEB, through their training, would identify other beneficiaries and participants for 2004.

4.9 Technical Assistance & Project Management

US$ 65,000 has been disbursed for the activities of technical assistance & project management office.

4.10 Summaryt

The total contract amount is 5.784 mill.US$ as the end of September 2003 as per the following table. Hence, the performance targets have been met for 2003.

Cost Table

Activity	Amount allocated for 2002 (US$)	Amount Contracted (in 2002) (US$)	Amount allocated for 2003 (US$)	Amount Contracted (as of September 2003) (US$)	Total Amount allocated for 2002+2003 (US$)	Total Amount Contracted (as of September 2003) (US$)
SME program	1,800,000	1,390,770	250,000	,217,530 - 100,000 [1]	2,050,000	1,608,300 - 100,000 [1]
Recovery/recycling	600,000	1,527,484	1,100,000	10,500 - 100,000 [2]	1,700,000	1,537,984 - 100,000 [2]
Customs Training			200,000	50,000 [3]	200,000	50,000 [3]
Chiller replacement	900,000	485,388	660,000	217,798 - 1,050,000 [4]	1,560,000	703,186 - 1,050,000 [4]
End user		0	90,000	200,000 [5]	90,000	200,000 [5]
Training activities	100,000	286,329	100,000		200,000	286,329 -
Technical assistance program/Project management office	100,000	84,373	100,000	65,000 -	200,000	149,373 -
Total	3,500,000	3,774,344	2,500,000	2,010,328 -	6,000,000	5,785,172 -

[1] Further contracts amounting 100,000 US$. is planned to be signed by late 2003 with the remaining SME's.
[2] Additional equipment amounting 100,000 US$ will be purchased in October 2003 as explained in Item 3.
[3] It is planned to be disbursed late 2003 for Custom training activities and equipments.
[4] Contracts amounting 1.05 Mill. US$ will be signed in October 2003 for Chiller replacement as explained in Item 5.
[5] Total contract amounting 200,000 US$. will be signed by late 2003 as explained in Item 6.

MoEF will inform the secretariat by 30th September regarding official 2002 ODS imports. For 2003, licenses will not exceed the quantities specified in the agreement under the RSP.

Part B
2004 Annual Program

1. Introduction
The refrigeration sector was approved in December 2001. 2003 implementation has been executed as per implementation plan 2003 with some corrections and a status report has been submitted. The third implementation Plan will cover the period from December 2003 and through December 31, 2004. The CFC consumption target will be met for 2004 as given in the Implementation Plan (see table below). All targets set by the sector plan after its approval in December 2001.

Taking into account the short time available to reduce the import to zero, a number of activities have to be initiated and continued in 2003 and 2004 in order to ensure the impact in 2004 and onward.

This third annual plan will consist of the following key components: a) review and strengthening of existing phase-out policies and regulations; b) issue CFC import quotas for 2004 (quotas for 2003 were issued to importers consistent with the draft sector plan); c) continue for the implementation signed contracts with SME commercial refrigeration companies; d) continue the implementation re-training of the refrigeration industry as per contracted; e) continue the implementation of the recovery/recycling/reclaim program as per contracted; f) continue the implementation of customs officials training; g) sign contracts with eligible chiller companies as identified during 2003 and 2004; and h) continue the implementation of end user retrofit programme.

2. Time Period Covered
December 31 2003 – December 31, 2004

3. Performance Indicators

3.1 ODS Consumption
The maximum allowable CFC consumption in the refrigeration – and foams sector in 2004 is given in the table below.

ODS Substance	**Consumption in refrigeration – and foams sector**
	Year-2004
CFC-12	166
CFC-114 and CFC-115	0
CFC-11 consumption	150
Total ODP consumption	316

All figures in MT.

The release of the fourth tranche for the 2005 Implementation Plan to be approved at the last meeting in 2004 is contingent on the performance target for 2004 being met.

The 2005 implementation plan will be submitted at the third meeting in 2004 accompanied by a 2003 consumption verification report.

3.2 Contracts Signed

In accordance with the agreement between Turkey and the Executive Committee of the Multilateral Fund, the third performance indicator is the value of contracts signed.

It is required that contracts amounting to 80% (US$ 0.8 million) of the available amount (US$ 1.0 million) are signed before the approval of the 2004 Implementation Plan.

4 Implementation Plan for 2004

The key components of the main activities in the 2004 Implementation Plan are as follows:

4.1 Policies and Regulations

In order to support the implementation of the sector plan, the policies and regulations in place will be reviewed and evaluated in the context of the sector plan. If necessary, implementations to amend existing policies, improve the enforcement the existing policies or initiate new policies will be taken.

4.2 Import Quotas

Quotas are issued to eligible importers on an annual basis. Each importer is entitled to a quota based on his historical imports and adjusted so the aggregate import is within the allowed annual consumption. While the 2003 quotas have been managed in accordance with the approved sector plan, the 2004 quotas will be issued during the first quarter of 2004 based on specific requests from the individual importers.

4.3 SME conversion

Signature of further contracts will be continued by late 2003 with the remaining SME's.

As per the written statements in the signed agreements, project monitoring will be continued and the completed projects will be reported by visiting companies. With this contracts, SME's obliged to report with the documentary evidence that CFC's are no longer used by the company except for service purposes. Agreement also states that company baseline equipment retained for service purposes only (charging units, vacuum pumps, and /or leak detectors) shall not be used for manufacture, assembly or installation of new refrigeration appliances. The projects are planned to be completed at the end of 2004.

4.4 Re-Training

The training of refrigeration technicians will be continued during 2004 as planned.

4.5 Recovery and Recycling Scheme

The equipment from RTI arrived in Turkey in June 2003. Equipment will be distributed to the SME's after they have participated in the training.

The reclaim and recycling centers will be established according to the plan given in Attachment 4 & Attachment 5. The organization, KOSGEB, will be responsible for either hosting the centers or subcontracting suitable companies for hosting.

Finally remaining segments of the Turkish refrigeration sector will receive recovery equipment.

The process will be monitored by KOSGEB and reports of the amounts being recovered/reprocessed will be submitted to TTGV quarterly.

4.6 Chiller Replacement Program

Establishment of the chiller database began during fall 2002. From this database a number of chillers were selected and contracts signed with the chiller owners as the first round (amounts up to the budget allocation). During winter 2002/03 the new chillers were installed and commissioned.

A survey was conducted to identify CFC chiller installations during February-March 2003.. Around 80 chillers have been identified as potential replacements for coming rounds.

After the seminars conducted in Antalya and Istanbul, applications received from chiller owners were evaluated. A number of chillers were selected and contracts will be signed with the chiller owners as the second round. During winter 2003/04 the new chillers will be installed and commissioned.

Signature of further contracts will be continued in 2004 with the identified chiller owners.

4.7 Customs Training

As per the agreed strategy (phased implementation), in Phase I, training for officials at 9 entry points will be realized in early November 2003 and distribution of refrigerant identifiers will be made during the training.. Procurement of 25 refrigerant identifiers, which will be used by the custom officials, will be completed early October 2003.

After getting the result of the 1st phase, with the suggestions of MoEF and Custom Department, Customs Training part will be carried out with the new training and new procurement of refrigerant identifiers for other custom departments.

4.8 End-User Retrofit

As a result of contacting 2 commercial refrigeration producers, Klimasan and Ugur, information on service organization as well as retrofit costs will be provided mid October 2003. So, first phase of end-user retrofit the contracts amounting 200,000 US$. will be signed with Klimasan and Ugur for retrofitting of its commercial refrigeration products late 2003.

The identification of other beneficiaries will start in parallel with the training. KOSGEB will report back on capabilities of the companies, and based on this, beneficiaries will be selected for the second phase end-user retrofit.

A strategy for the end-user retrofit including more detailed information of the cost implications will be made during spring 2004. Based on the strategy a number of companies will be invited to participate in this activity.

Results of first round end-user retrofit will be disseminated during spring 2004 to remaining companies and these will be invited to apply for participation in the subsequent phases of the component.

4.9 Technical Assistance & Project Management

Technical assistance for above activities & operation of the project management office will be continued.

4.10 Cost Table

Activity	Amount allocated for 2004 (US$)	Activity starting	Contracts signing completed	Full ODS impact of activity
Policies and regulations	0			
Quota allocated	0	Dec. 2003	Sept. 2004	
SME program	0	Dec. 2001	Dec. 2003	25% in 2002 75% in 2003 100% in 2004
Recovery/recycling	0	May, 2002	Dec. 2003	2005
Customs training	100,000	April 2003	Dec. 2004	
Chiller replacement	600,000	Jan. 2003	Ongoing	2005
End user	200,000	Jan. 2003	Ongoing	2005
Training activities	50,000	Jan. 2002	Ongoing	NA
Technical assistance program/Project management office	50,000	Jan. 2003	Ongoing	NA
Total	1,000,000			

Attachment 1

TTGV-NO	NAME OF COMPANY	BUDGET (US$)
6	Nurdil Teknik Soğutma San. ve Tic. Ltd. Şti.	53,850
12	Altuğ Soğutma Sistemleri Otomotiv Turizm San. ve Tic. Ltd. Şti.	2,975
14	Buzdon Soğutma Isıtma ve Dayanıklı Tüketim Malları San. ve Tic. Ltd. Şti.	47,925
15	Teknik İş Soğutma ve Isıtma San. Dayanıklı Tüketim Mamülleri Pazarlama Ltd. Şti.	5,305
18	Behzat Makina San. ve Tic. Ltd. Şti.	2,975
19	Alaska Gıda Soğutma Dayanıklı Tüketim Malları San. ve Tic. Ltd. Şti.	2,975
20	Akmaks Soğutma Isıtma Sanayi Tic. Ltd. Şti.	3,450
32	Mega Mutfak Eşyaları ve Ticari Buzdolapları	2,975
38	Gümüş Güneş Ticaret	2,975
44	Yüksel Ticaret Mutfak Cihazları ve Sanayi Buzdolapları	2,975
48	Üçkar Soğutma Mutfak Gereçleri San. ve Tic. Ltd. Şti.	2,975
50	Algaz Mutfak Cihazları San. ve Tic. A.Ş.	4,950
64	Şenol Ticari Buzdolabı Sanayii	6,925
71	Buzkap Soğutma San.Tic.Ltd. Şti.	44,925
75	Termo Ark San. ve Tic. Ltd. Şti.	4,615
77	Burak Pazarlama Gıda San. ve Tic. A.Ş.	2,975
78	Kaysu Su Arıtma San. ve Tic. Ltd. Şti.	127,400
82	Ömür Isı Sanayi ve Tic. A.Ş.	2,975
91	Buzullar Soğutma San. Ltd. Şti.	4,120
94	Ata Makina Isı San.ve Tic.Ltd. Şti.	3,450
104	Termonem Soğutma ve Süpermarket Ekipmanları San. İç ve Dış Tic. Ltd. Şti.	43,975
135	Karsan Buzdolabı San.	44,450
155	Alaska Soğutma Sanayi	2,975
158	Akçay Soğutma Klima ve Havalandırma San. Tic. Ltd. Şti.	45,950
160	Bakaçlar Soğutma San. ve Tic. Ltd. Şti.	4,950
164	Mattaş Endüstriyel Mutfak San. A.Ş.	6,255
165	Ekosan Mutfak ve Soğutma Ekipmanları San. ve Tic. Ltd. Şti.	59,775
166	Yılmaz Soğutma Sanayi	4,950
167	Öz Buz Teknik Soğutma Sanayi	6,925
169	Mertsan Isıtma Havalandırma Klima San. ve Tic. Ltd. Şti.	2,975
177	İkizler Soğutma	2,975
180	Tekso Teknik Soğutma San. Tic. A.Ş.	95,800
181	Tekno Çelik Soğutma ve Mutfak Cihazları San. A.Ş.	8,900
185	DES Soğutma	2,975
187	Buzkar Soğutma	2,975
193	Kaplanlar Soğutma San. ve Tic. Ltd. Şti.	53,850
196	Kevser Soğutma	2,975
206	Capri Soğutma San. ve Tic. Ltd. Şti.	43,975
222	Şanlı Soğutma San. ve Tic. Ltd. Şti.	44,450
226	Gama Soğutma	2,975
229	Mekso Soğutma Sanayi ve Ticaret Ltd. Şti.	49,900
233	Teknik Soğutma	45,950
255	Buz Çelik Soğutma Malzemeleri ve Metal San. ve Tic. Ltd. Şti.	44,785
261	Buzsan Buzdolapları Mühendislik Hizmetleri Kuluçka Makinaları Tekstil Hizmetleri İmalat Sanayi ve Ticaret A.Ş.	2,975
265	Bütaş Klima San. ve Tic Ltd. Şti.	2,975
277	Gültekin Teknik Isıtma Soğutma San. ve Tic. Ltd. Şti	5,425
283	Kartaş Soğutma San.Tic.	43,975
284	Ege Fen Klima Sistemleri ve Turizm San. Tic. Ltd. Şti.	3,450
289	Diktaş Soğutma ve Metal İmalat San. ve Tic. A.Ş.	49,900
294	Kar-Buz Soğutma	45,615
295	Yaz-Kar Klima Soğutma San. Tic. A.Ş.	2,975
300	Ege Soğutmacılık Klima Soğuk Hava Tes.İth. İhr. San.ve Tic. A.Ş.	33,000
302	Doğal Isıtma Soğutma Cihazları	2,975
304	Tamer Soğutma San. ve Tic. A.Ş.	53,850
305	Marso Endüstriyel Soğutma Sanayi ve Ticaret Ltd. Şti.	43,975

306	Güldem Soğutma Sistemleri Klima Tesisat Taahüt Tic. ve San. Ltd. Şti.	2,975
308	Kartek Soğutma Sanayi ve Tic. Ltd. Şti.	2,975
312	ISM Makine Elektrik Sanayi ve Ticaret A.Ş.	41,000
314	Albiso Klima Soğutma San.ve Tic. Ltd. Şti.	3,450
315	Özçil Dayanıklı Tüketim Mal. San. ve Tic. Ltd. Şti.	2,975
317	Korkmaz Soğutma	45,950
318	Teknik Soğutma	2,975
319	Ergül Teknik Soğutma ve Mutfak Dekorasyon San. Ltd. Şti.	43,975
320	Cantek Soğutma Mak. San. ve Tic. Ltd. Şti.	46,425
321	Meltem Klima	2,975
322	Asya Soğutma Isıtma Elem. Ve Gıda İşletmeleri San. Tic. Ltd. Şti.	2,975
323	Ahmet Yar Soğutma San. Tic. A.Ş.	99,200
324	Dört Mevsim Isıtma Soğutma İnş. Taah. San. ve Tic. Ltd. Şti.	56,080
325	Sepkimtaş A.Ş.	3,925
	TOTAL	**1.608.300**

Attachment 2

Turkish RSP – SME Conversion – Evaluation Criteria

1. Background

The most urgent component of the Turkish Refrigeration Sector Plan (RSP) is the conversion of the small and medium sized enterprises (SME), since these have been suffering from the accelerated Turkish ODS phase-out regulation.
Around 300 SME have been identified and interviewed in 1998, 2001 and in 2002. Of the around 300 SME's 147 companies responded to the 2002 survey and they will all be included in the project.
Remaining companies have either refused to participate (98 companies), have shifted to other business or have been closed (41 companies) or were impossible to reach (8 companies).
Application forms for the 147 SME's have been evaluated and their grant allocation determined using the subsequent evaluation criteria.

2. Eligibility Criteria

The following eligibility criteria have been applied:

- All companies using or have been using CFC-11 or CFC-12 are eligible for participation; and
- Companies using only non-CFC (HCFC or HFC) with no reported CFC consumption are eligible for participation and their HCFC / HFC consumption is taken as potential CFC consumption. However, this potential consumption is not taken into account in the final ODS phase-out calculation.

3. ODS Phase-Out Evaluation

The following criteria/methods have been applied for determination of ODS phase-out:

- Baseline for ODS phase-out is taken as either 1999 consumption or average 1997-99;
- Companies not reporting ODS consumption have been evaluated on production volume, production type and number of employees. A standard charge of either 10 kg CFC-12 or 1 kg CFC-12 per unit has been applied. This estimated consumption is not taken into account in the final ODS phase-out calculation; and
- Companies providing data for only 2000 and/or 2001 are evaluated as if 1999 production was similar to 2000 or 2001 production. This may result in a conservative estimate, since Turkey suffered from economical crisis in 2001; This estimated 1999 consumption is not taken into account in the final ODS phase-out calculation.

4. Grant Allocation

Grant allocation have been determined using the following criteria:

- No Cost Effectiveness threshold have been applied;
- Export is not deducted (based on first 45 received applications, where no export exceeded 10%);
- Eligible baseline equipment will be replaced on a one-to-one basis;
- Above-mentioned criteria will be adjusted, so that companies can receive one charging unit, one vacuum pump and one leak detector per 250 units annual production. The rationale for 250 annual produced units is one unit produced per day. Units may be charged on-site and therefore

companies may have difficulties transporting the equipment from one site to another in one working day;

- If a company will be eligible to receive several charging units or vacuum pumps (using above criteria), they have the freedom to spend the money for stationary charging units with higher capacity provided the cost is within the total allocation for charging units and vacuum pumps;
- All companies having manual PU operations are eligible for one PU dispenser;
- The standard PU dispenser will be low pressure (LP) and have a capacity of 60 kg/min. The rationale for dispenser capacity of 60 kg/min is that such capacity will facilitate proper foaming of most commercial refrigerating appliances;
- Companies being eligible for one or two foam dispensers may procure dispensers of different capacity or may procure high pressure (HP) dispenser(s) at their own choice. However, potential additional costs has to be covered by the SME;
- Standard cost for refrigerant equipment is determined as the maximum of 3 quotes obtained. The rationale for using maximum cost is that the equipment should be available within reasonable distance of the SME to ensure future servicing but also to facilitate normal commercial practice by the SME. Standard costs applied are as follows: Charging unit: US$ 1,165; Vacuum pump: US$ 475; Leak detector: US$ 335. (Standard cost evaluation is detailed in Item 6);
- Standard cost for PU equipment amounts to US$ 38,000 as defined by Cannon price quotation;
- All companies are given a grant allocation of US$ 1,000 for chemicals for test and trials of the refrigerating circuit; and
- All companies having PU operations are given a grant allocation of US$ 3,000 for chemicals for test and trials of the foam dispenser.

5. Baseline Disposal

The following rules will be applied for CFC baseline equipment:

- Companies having refrigeration baseline equipment (charging units, vacuum pumps and/or leak detectors) are allowed to keep this equipment for servicing purposes. Companies are committed to refrain from using this equipment for production of refrigerating appliances using CFC; and
- Companies having PU foam dispensers are obliged to dispose these as per Montreal Protocol rules. Documentary evidence for disposal shall be submitted to TTGV.

6. Standard Cost Calculation For Refrigeration Equipment

Price quotations were received from the companies Wigam and Refco, both represented in Turkey. Further the company, ITE, which is about to establish representation in Turkey, provided a price list applicable for Turkey. The price quotations were based on technical requirements sent by TTGV specifying standard equipment for evacuation, charging and leak detection.
The charging unit was specified so that two configurations should be quoted as follows:

- Configuration 1: Compact unit consisting of vacuum pump, filling glass, charging manifold, manometers and hoses; and
- Configuration 2: Separate components comprising vacuum pump, charging manifold, manometers, hoses and charging scale.

The prices obtained were as follows:

Company	Description	Type	Price (US$)
Wigam[1]	Charging unit – configuration 1	SP45D/VR/A6/4	475.40
	Charging unit – configuration 2	EPS42D/V/A6/4/EV	772.60
	Vacuum pump	DIP 402 (Including SW-68 oil for the vacuum pump	266.40
	Leak detector	TIF XP-1	282.30
Refco[2]	Charging unit – configuration 1	10705-RD-4-R-134a	991.30
	Charging unit – configuration 2	12800	708.10
	Vacuum pump	RL-4 (Including P-15-S-1 oil for the vacuum pump)	363.50
	Leak detector	XP-1	276.50
	Leak detector	ZX-1 (not including the spare sensor)	333.80
ITE[1]	Charging unit – configuration 1	CS 4D 4 22/44	1,162.10
	Charging unit – configuration 2	MK 50DS+2805 BC/4+E-348 x 3+ITE 9120	914,30
	Vacuum pump	MK 50DS (including 1 liter 500 P1 oil)	472,70
	Leak detector	ITE-5650A-FP + ITE-573	265,20
Standard cost	**Charging unit**		**1,165.00**
	Vacuum pump		**475.00**
	Leak detector		**335.00**

[1] Prices given in Euro: Conversion: 1 Euro = 0.9905 US$
[2] Prices given in Swiss Franc: Conversion: 1 CHF = 0.6744 US$

Attachment 3

TENTATIVE PROGRAM

Train-the-trainer seminar

Lesson duration: 40 minutes

Course hours: 09:30 (First day, 10:00)-17:30

Lunch break: 12:30 to 13:30

Practical work on used refrigerator

Lecturers: Mr. Nuri OZKOL (Mech.Eng) / Mr. Ole Nielsen (Mech.Eng)

Course Material: Revised translation of UNEP Document

First day

Lesson no.	Description	Background material
1		
2	Start of the seminar Presentation of participants Presentation of the course History of refrigeration Components of Vapor Compression Refrigeration Systems	
3		
4		
Lunch break		
5	Analysis of vapor Compression Refrigeration Cycle on Ph diagram Refrigerants, Types	
6		
7	Lubrication Oils	
8	Contamination of Refrigerant systems (with water,air, noncondensable gases, acids, etc.)	

Second day

Lesson no.	**Description**	**Background material**
1	Description of ozone layer Ozone depletion (cause / results) -skin cancer, cataract, damage on the life, weakening of human immune system	UNEP Document &/or overheads,software
2		
3	Environmental legislation against ozone depletion	"
4	Local legislation about refrigerants	"
Lunch break		
5	Montreal, Beijing, Kyoto protocols	"
6	Control of ozone depleting refrigerants Types of ODR, control Calendar on limiting usage and production of ODS's	"
7		
8	Alternative refrigerants	"

Third day

Lesson no.	**Description**	**Background material**
1	Installation of refrigerant systems	"
2	Service applications on Refrigerant Systems	
3	Service and maintenance equipment of Refrigerant systems, hand tools	
4		
Lunch break		
5	True Applications of servicing Refrigerant Systems	
6	False Applications of servicing Refrigerant Systems - Recovery, flushing, oil change, charging	
7		
8	Discussion	

Fourth day

Lesson no.	**Description**	**Background material**
1	Examination and demonstration of service equipment	Practical sessions
2		
3	Running the equipment	Practical sessions
4	Recovering the refrigerant	Practical sessions
Lunch break		
5	Reclaim / reuse of the refrigerant	
6	Leak detection, evacuation, exchange of components	Practical sessions
7		
8	Discussions and conclusions	

Fifth day

Lesson no.	**Description**	**Background material**
1	Summary of the seminar	
2		
3	Questions	
4	Exam (if required)	
Lunch break		
5	Conclusion	
6	Introduction of technician course notes Explanations on technician training	
7	Presentation of certificates to the participants	
8		

Program model

NO	PROVINCE	2003		2004				TOTAL PERSON	AUTHORIZED SERVICES NUMBER (REFRIGERANT SECTOR)	MINISTRY OF EDUCATION SCHOOLS (Industrial Technical Teachers School)	TRAINER NUMBER	TOTAL COURSE HOUR
		1 DAY (5 Hr)		I. HALF 5 DAY (25 Hr)		II. HALF 5 DAY (25 Hr)						
		Technicians		Technicians		Technicians						
		Course Number	Minimum Person	Course Number	Minimum Person	Course Number	Minimum Person					
1	ADANA	2	20	1	15			**55**	49	Yeşilevler EML	1	35
2	ANKARA	3	20	3	15			**105**	100	Yapı Meslek L	3	90
3	BURSA	2	20	2	15			**70**	64	Atatürk YTEM	1	60
4	DENİZLİ	1	20	1	15			**35**	25	Atatürk Tes. Tek.	1	30
5	G.ANTEP	1	20	1	15			**35**	23	Mehmet Akif Ersoy EML	1	30
6	İSTANBUL 1	11	20	8	15			**680**	694	Küçükçekmece İsmet Aktar EML	2	255
7	İSTANBUL 2	11	20	8	15					Yakacık EML	2	255
8	İZMİR	10	20	4	15			**260**	262	Bornova Seyit Şanlı EML	2	150
9	KAYSERİ	1	20	1	15			**35**	25	Mimar Sinan EML	1	30
10	KONYA	2	20	1	15			**55**	51	Meram EML	1	35
11	SAMSUN	1	20	1	15			**35**	35	Atakum EML	1	30
12	Ş.URFA	1	20	1	15			**35**	23	Şanlıurfa EML	1	30
13	ANTALYA	2	20			2	15	**70**	57	Atatürk EML	1	60
14	AYDIN	2	20			1	15	**55**	43	Mimar Sinan EML	1	35
15	BALIKESİR	2	20			2	15	**70**	56	100.Yıl EML	1	60
16	DİYARBAKIR	1	20			1	15	**35**	26	Burhanettin Yıldız EML	1	30
17	ISPARTA	1	20			1	15	**35**	22	Isparta EML	1	30
18	KOCAELİ	2	20			1	15	**55**	44	Atatürk EML	1	35
19	KÜTAHYA	1	20			1	15	**35**	25	Kütahya EML	1	30
20	MANİSA	2	20			1	15	**55**	48	Manisa EML	1	35
21	MERSİN	2	20			1	15	**55**	53	Mersin EML	1	35
22	MUĞLA	2	20			2	15	**70**	65	Muğla EML	1	60
23	TRABZON	1	20			1	15	**35**	23	Trabzon EML	1	30
24	ZONGULDAK	2	20			1	15	**55**	47	Zonguldak EML	1	35
TOTAL		**66**	**1320**	**32**	**480**	**15**	**225**	**2025**	1860		**29**	**1505**

Attachment 4

Locations of recycling and reclaim centers

Recycling centers will be located in the following cities:

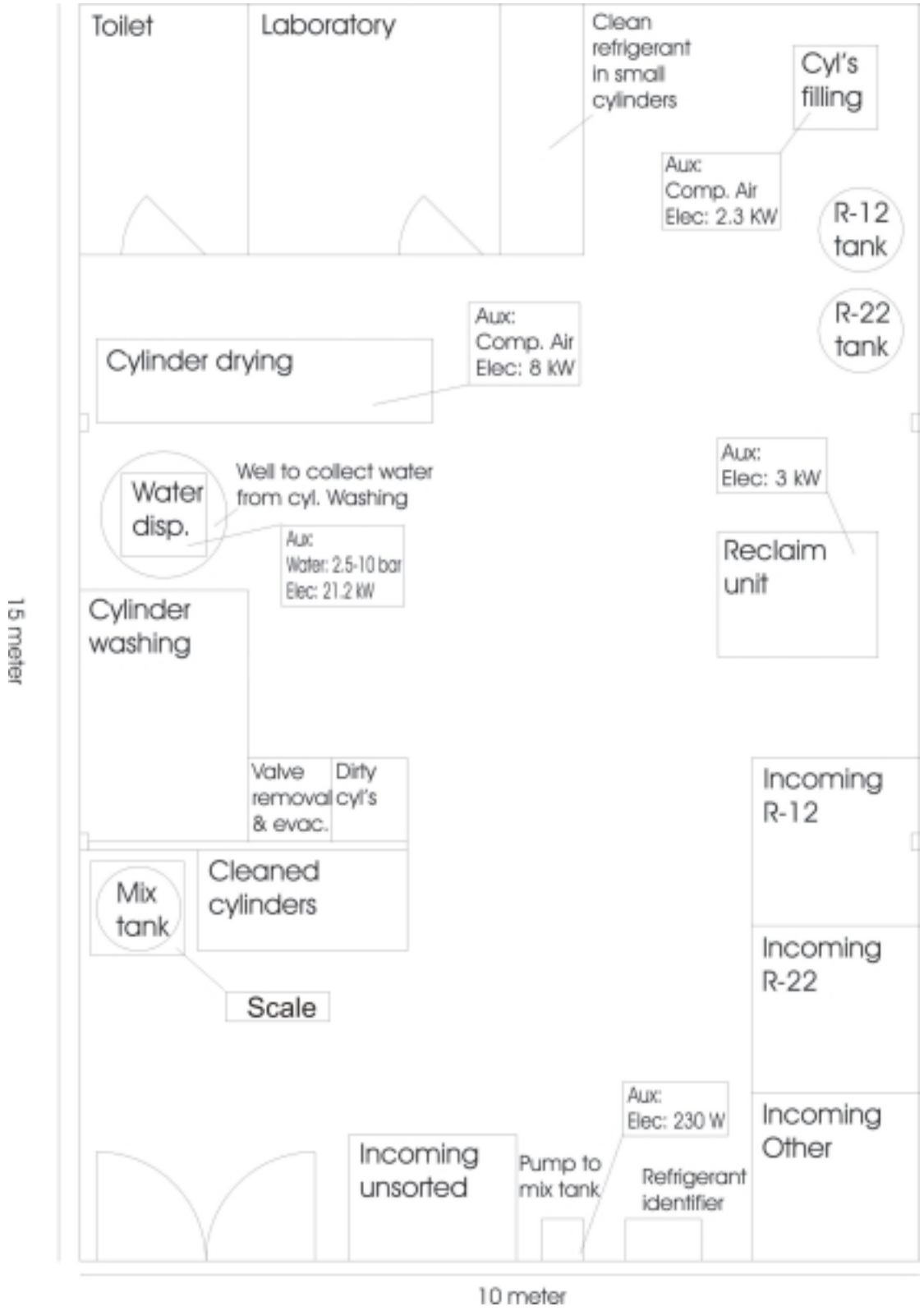
- Adana
- Ankara
- Antalya
- Aydin
- Balikesir
- Bursa
- Diyarbakir
- Gaziantep
- Icel
- Isparta
- Istanbul (2)
- Izmir
- Kayseri
- Kocaeli
- Konya
- Kütahya
- Manisa
- Mugla
- Samsun
- S. Urfa
- Sivas
- Tekirdag
- Zonguldak

Reclaim centers and storages will be located in the following cities:

- Istanbul
- Ankara
- Izmir

Attachment 5

Draft layout for Istanbul reclaim center and storage



Attachment 6

Recovery / Recycling Study Tour - Report

Turkish Refrigeration Sector Plan

In the period March 24 to April 5, 2003 Mr. Senol Ataman / TTGV, Mr. Nusret Özgünaltay / KOSGEB and Mr. Ole R Nielsen / RE-A-CT visited Czech Republic, Hungary and Georgia to collect experiences from implementation and operation of a recovery / recycling scheme as well as experiences from a re-training scheme for refrigeration service technicians.

Mentioned countries were selected, since the R&R schemes have their own specialties as well as each has faced problems during implementation. It is the aim to utilize this experience during implementation of the Turkish R&R and training project.

During the visit to Georgia, a potential cooperation on customs training was also discussed.

The study tour participants wish to express thanks to all persons met for their willingness to share experience as well as help in organizing meetings and site visits.

The following summarizes the discussions and findings:

Czech Republic

Background
The first Czech law on ODS was introduced in 1993. The law was connected with the Czech ODS production closure, which happened by January 1, 1994. According to this law, an environmental tax of 5 US$/kg refrigerant was applied, bringing the CFC-12 price at 6 US$/kg. This high tax led to substantial stockpiling of CFC-12. In 1995 the tax was further increased to 7 US$/kg. This led to a high activity in refrigerant recovery.

Recovery/recycling
The Czech recovery/recycling scheme was one of the first in Eastern Europe approved be the GEF in 1994. The scheme provided for 500 recovery units, 250 pieces with 50% grant support and 250 pieces with 25% grant support. In addition 2,000 recovery cylinders was included in the project (100% grant support). The scheme also included 13 collection centers as well as a refrigerant reclaim center (100% grant support).

Initially no refrigerant was collected. A questionnaire was sent to all companies having received recovery equipment and these confirmed that no refrigerant is recovered. However, if was realized that a certain practice has occurred. The technicians recovered and re-sold the refrigerant “unofficially”. A second survey was conducted where companies were allowed to be anonymous. This showed that the recovery operation actually was ongoing. The weakness of this practice is, that there is no quality control, since “unofficial” recovered refrigerant is either not cleaned or maybe only partly cleaned, which leads to increased failure rate of the refrigerating systems, especially those utilizing hermetic

compressors. It has been proven that the failure rate of hermetic compressors in Czech republic in mid 1990'ies was substantially higher than in other European countries. Therefore it was recommended only to use recovered and recycled refrigerant for semi-hermetic and open-type compressors.
However, with the improvement of the financial situation in Czech republic, the "unofficial" practice became less frequent and an increase of collected amounts of refrigerant was also experienced.

As of today, the only reclaim center, located at the company Ekotez in Prague, has turned out to be a profitable business. Actual profit amounts were shown to the study tour participants, but it was requested not to disclose these. A total of around 3 MT ODS is reclaimed annually.

The quality check at the reclaim center comprises a rough check of incoming refrigerant by means of a refrigerant identifier. Outgoing refrigerant is randomly (3-4 times per month) checked by means of a gas chromatograph and a Karl Fischer titrator (for water content). A more structured quality test, e.g. of all outgoing refrigerant was discussed and the Czech experience has shown, that in the case where a refrigerating system running with reclaimed refrigerant has a failure, the failure may often be claimed to relate to improper quality of the reclamation.

Training
A training manual was also prepared as part of the Czech recovery/recycling project. This manual is used for the technician re-training, which is followed by an exam. If the exam is passed, the technician gets the "green card". The "green card" has been promoted through a public awareness raising campaign. A copy of the training manual was obtained and it was endorsed that exerts from the manual could be used for a Turkish training manual.

Lessons learned
The Czech recovery / recycling scheme has initial problems in getting the proper function. It was experienced that a certain period is required for the technicians to understand the benefits. As for Czech republic, this period was around 5 years.

Czech republic has experienced refrigerating appliances using hydrocarbons as refrigerants. Cases where CFC-12 systems have been retrofitted into hydrocarbons are also reported. Unfortunately some of these retrofits have taken place without any marking of the refrigerating system telling that it contains a highly flammable refrigerant. This malpractice should be avoided through training.

The Czech Refrigeration Association has played an important role in the Czech recovery/recycling scheme, since this organization has regular meetings where initiatives and information can be conveyed.

Hungary

Background
The Hungarian ODS phase-out project was approved by the GEF in 1996. The project included a recovery/recycling/reclaim scheme as well as a training component for refrigeration technicians. The project was initiated prior to approval, so that preparatory work was done when the grant became effective.

Recovery/recycling

The R&R project included initially 650 recovery units, 50 recycling units and 1 reclamation center. However, it was revised during implementation since combined recovery/recycling units were very popular as all operations could be performed on-site. Procurement was very comprehensive (61 companies were invited to bid) and evaluation very complicated. It was decided as a first step to buy only 150 recovery and recycling units.

A second order was placed at another supplier comprising 150 recovery units and 175 recycling units. This procurement went smoother.

A mishandling of the recovery units was experienced. Both types utilize the so-called "oil-less" compressor, which gets it's lubrication from the oils contained in recovered refrigerant. However, if this compressor is used with virgin refrigerant, compressor is left without lubrication and will soon be damaged. Unfortunately this happened in Hungary and more unfortunately both suppliers disappeared from the market, so spare compressors were not available. As of today around 100 recovery units are damaged and not used.

The reclaim center is located at a refrigerant distributor in Budapest. Reclaim facilities include reclaim unit, gas chromatograph and Karl Fischer titrator. So far no major problems were experienced with the reclaim equipment. All incoming and all outgoing refrigerant is tested with above equipment. No information was given on the profitability of the reclaim center, except that around 12 MT refrigerant (CFC-12, HCFC-22 and HFC-134a) was processed annually. However, it was informed, that it was very difficult to sell reclaimed refrigerant since Hungary has extensive illegal import from former Yugoslavia. The price of the illegally imported CFC-12 is around one-third of the price of reclaimed CFC-12, so only larger companies, which are following legislation, do utilize this.

Training

The development of a training program was part of the Hungarian ODS phase-out program. This turned out to be very successful and as of now a total of 5,100 technicians have been trained and subsequently certified by a "green card". The Hungarian Refrigeration has administered the training and has now started to renew the "green cards". Of the 5,100 certified technicians it is expected that around 3,000 are active in servicing refrigerating appliances.

The "green card" was strongly supported by a public awareness raising campaign – also part of the Hungarian ODS phase-out program.

Lessons learned

Hungary faced two major problems. First is related to the procured equipment, where both suppliers disappeared. Second problem was the illegal import of CFC-12, which emphasizes the importance of a comprehensive customs training program.

The reclaim operation seems costly, since both incoming and outgoing refrigerant is subjected to laboratory tests. Incoming refrigerant should only be screened for mixtures, which will reduce the operational costs of the reclaim center.

The trend in Hungary is, that former large state-owned service companies are not split-up into small companies. These small companies do lack time for education/training purposed and might also not see the need, since ODS operations can continue with illegally imported CFC-12.

The Hungarian Refrigeration Association has been the key player in both recovery/recycling project as well as the training project.

Georgia

Background
Georgia was originally a non-Article 5 country due to it being part of Soviet Union in 1987 when Montreal Protocol was agreed upon. In 1996 Georgia request re-classification and was subsequently "granted" A-5 status. Since Georgia has no manufacturing industries using ODS, the Montreal Protocol activities so far has been a refrigerant management plan (RMP) implemented by UNEP/UNDP; a customs training project – under implementation with UNEP and a Methyl Bromide project jointly implemented by UNIDO and Government of Canada. Recently an end-user project was approved – to be implemented by UNDP.

Recovery/recycling
The Georgian recovery/recycling project was relatively small. A total of 2 recycling units, 15 recovery units and 45 manual recovery pumps were procured. The recycling units are located at the Georgian Refrigeration Association (in Tbilisi and Kutaisi) and the recovery equipment distributed among service companies. Companies receiving equipment are obliged – through their contract - to recovery at least 150 kg (recovery unit) or 25 kg (manual recovery pump) annually. Some companies were not able to meet these requirements and some went out of business and equipment was returned to the Georgian Refrigeration Association. This returned equipment (6 recovery units and 5 manual recovery pumps) can now be rented on a daily basis for technicians in need of such equipment. Rent is between 0.5 and 1 US$ per day.

The recycling units are processing around 1 MT CFC-12 in total per year. It was informed that there is a demand for recycling of HCFC-22, but the equipment supplier, RTI, has informed that this is not possible with the equipment delivered. The recycling center offers two options: a) Centers can recycle for technicians: price is 1.5 US$ per kg; and b) Recycling center can buy refrigerant: Price 1.5 US$ per kg. When recycling centers sell recycled refrigerant sales price is 3.5 US$ per kg. Virgin refrigerant is 4.5 US$ per kg. As of today around 100 kg contaminated refrigerant is stored. However, Georgia does not have any facility for refrigerant incineration.

It was informed, that since the Georgian recovery/recycling project is small, there is no RTI representative in Georgia, which makes spare parts very expensive. Spare parts are especially filters for the recycling units.

It was also informed that some refrigerant cylinders have leakages and finally some refrigerant identifiers were supposed to give wrong results.

However, a decrease in CFC-12 import has been realized which indicates that recovery actually happens.

Training
The Georgian Refrigeration Association has implemented training. A total of 30 training workshops covering around 300 technicians have been conducted. Each workshop had a duration of 30 hours basically following the UNEP training manual: "Good Practices in Refrigeration". It is planned to update the training with improved methods for retrofit. The trainees were all certified and this certificate is now supported by legislation (May 8, 2002). The training was advertised on boards, Internet and through a public awareness raising campaign (part of the institutional strengthening project). The certificate has a validity of 3 years. Further it is planned to require a certificate for persons handling ODS. This will also be supported by legislation; however, the law is not signed yet.

Customs training
Georgia is currently implementing a customs training program in cooperation with UNEP. The customs train-the-trainer seminar is scheduled for April 30 to May 2, 2003. Georgia has also substantial illegal import and customs training has high priority at MoE. Cooperation with the Turkish customs training component was discussed and it was agreed that this should happen through direct contacts between MoE's. Turkish representatives were invited to the Georgian train-the-trainer seminar.

End-user retrofit
Georgia expressed interest in the Turkish end-user retrofit component, which will commence during 2003. Whereas situations in Turkey may be different from Georgia, where majority of refrigerating installations are Russian, retrofit procedures and experience exchange can be valuable for both countries. It was therefore agreed to keep contact on this subject.

Lessons learned
The Georgian recovery/recycling project has problems with equipment service and costly spare parts since the supplier is not represented in Georgia. The Turkish recovery/recycling project may improve situation, since RTI will be represented in Istanbul.

Equipment reliability is important. Georgia has faced problems with refrigerant identifiers (low cost model) and do not fully trust results.

Legislative support and active role of MoE is an important factor in successful implementation.

The Georgian Refrigeration Association has played a central role in implementation of both the recovery/recycling as well as the training project.

Findings

The study tour provided good advise on both training and recovery/recycling. Findings are as follows:

Training
All countries performed very well in respect to training of technicians. Each trainee – after examination – was provided with a certificate. Such practice should also be adopted for Turkey. The public should be aware that technicians are educated and should ask for certified technicians when in need for service of their refrigerating appliances. Such awareness should be raised through

advertisements or campaign. Furthermore a legislative support, e.g. by allowing only certified technicians to handle ODS, is also strongly recommended.

Customs training

Except for Czech Republic, all countries reported major problems with illegal import of ODS, which hampers the operation of the recovery/recycling scheme. Such situation could also appear in Turkey. Therefore it's recommended to make the customs training component as comprehensive as possible. Furthermore, it's recommended to cooperate with neighboring countries on such activities. Georgia has already invited Turkey to participate the Georgian customs training. Turkey should take initiative to share with other countries as well.

Recovery/recycling

Countries visited have all different kind of problems with the equipment. Czech Republic has only partly funding of equipment; Hungary had major problems with after-sales service; and Georgia has problems with spare-part availability. None of these issues are expected for Turkey.

Acceptance by the technicians of the quality of recycled/reclaimed refrigerant has been problematic in all countries visited. This will reduce the amounts of refrigerants collected for recycling. It is therefore recommended that the 3 Turkish reclaim centers provide certificates for all refrigerant reclaimed. In order to make certification feasible, it is proposed to invest in additional equipment for the reclaim centers as follows:

- 3 pcs of Karl Fischer titrators (one for each center); and
- 12 pcs of 500 kg refrigerant tanks (4 for each center: 2 for incoming refrigerant, e.g. CFC-12 and HCFC-22; and 2 for reclaimed refrigerant).

Costs for this additional equipment is estimated at around 50,000 US$.

The 24 recycling centers should advice that recycled refrigerant is particular useful for refrigerating installations having semi-hermetic or open-type compressors.

Motivation of the technicians is very important in order to have the recovery/recycling scheme working. All countries visited reported, that the recycling/reclaim centers could buy recovered refrigerant from technicians. This option should also be considered by KOSGEB. In any case, if illegal import is minimized, the recycling/reclaim operation can be profitable.

April 15, 2003
Ole Reinholdt Nielsen

Attachment 7

Selection/support criteria for first round of chiller replacement

For the demonstration part of the project, it's proposed to select chillers and determine financial support as follows:

- Only chillers running with CFC's are eligible for participation. All CFC's are eligible, i.e. CFC-11, CFC-12, CFC-113, R-500 or others if present.
- Only chillers using turbo/centrifugal compressors are eligible for participation, since the energy saving potential is related to the improved design of these compressors.
- Only chillers that are in operation are eligible for support. Chillers, which are physical present but not operated, cannot be supported.
- The funding level will be determined based on either installed capacity or required capacity whichever is the lowest. It should be noted, that chiller owners having overcapacity are not encouraged to request replacement of this overcapacity, since overcapacity means that the chiller will run part-load more frequent, which will substantially worsen the energy efficiency.
- Funding per chiller is determined by the following:
    - Low pressure chillers: Nominal capacity upto 2,500 kW:
      Support = 40 $ x nominal capacity (in kW) + 70,000 $
      Nominal capacity above 2,500 kW
      Support = 68 $ x nominal capacity (in kW)
    - High pressure chillers: 75 % of the support for low pressure chillers.
- Funding level is determined such, that HFC-134a technology can be utilized. This means that for low pressure chillers a complete chiller replacement is foreseen. For high pressure chillers retrofit is foreseen. The rationale for such criteria is, that HCFC-123 is an interim technology and the Montreal Protocol already controls HCFC's.
- The funding level is planned to cover all required costs, including freight, installation and refrigerant /oil costs.
- Chillers having seasonal load profile, which are basically chillers used for comfort cooling will also be offered funds for frequency regulation. Each company participating the project can only have one frequency regulator no matter how many chillers they have installed. The funding is determined by:
    - Support = 7.5 $ x nominal capacity (in kW) + 16,250 $
- The total support resulting from above is the maximum funding. Actual funding will be adjusted according to the capacity of the new chillers being installed.
- Funding will be a combination of grant and soft loan. The grant part is 25 %.

Pay-back terms

The soft loan support will be paid back utilizing the energy savings. However, for practical reasons, pay back will be in fixed installments. The following apply: After chiller replacement completion, pay back period starts. Payback period will be 3 years with a grace period of 6 months followed by 5 equal installments.

Attachment 8

Selection/support criteria for second round of chiller replacement

- Only chillers running with CFC's are eligible for participation. All CFC's are eligible, i.e. CFC-11, CFC-12, CFC-113, R-500 or others if present.
- Only chillers using turbo/centrifugal compressors are eligible for participation, since the energy saving potential is related to the improved design of these compressors.
- Only chillers that are in operation are eligible for support. Chillers, which are physical present but not operated, cannot be supported.
- Project participants are requested to submit a proposal for financial support. This proposal will be evaluated and ranked according to the following criteria:
    - Funding level: The requested financial support will be compared to standard chiller costs and lowest requests will be given priority;
    - Chiller age: Environmental impact is reverse proportional to chiller age according to an American survey done by ICF Kaiser. Therefore "young" chillers will be given priority. 10 years of age will be used as reference;
    - Chiller efficiency: The main aim of the project is to apply technical solutions that would ensure energy savings. Therefore energy efficient solutions will be given priority. Chillers having constant annual load profile will be evaluated only on the COP (Coefficient Of Performance), whereas chillers with seasonal load profile will be evaluated on both COP and NPLV (Non-standard Part Load Values). Chiller efficiencies shall be specified at normalized conditions according to ARI 550/590. COP of 0.6 kW/TR and NPLV of 0.5 kW/TR will be used as reference.
    - A ranking factor incorporating above criteria will be calculated (the lower factor – the higher ranking).
- Standard chiller costs will be determined on either installed capacity or required capacity whichever is the lowest.
- Standard chiller costs are determined such that HFC-134a technology can be utilized. This means that for low-pressure chillers a complete replacement is foreseen, whereas for high-pressure chillers retrofit is foreseen. Interim technologies, e.g. HCFC-123, will not be considered eligible for support.
- Determination of standard chiller costs for chillers with seasonal load profile will include allocation for improvement of part load operation, e.g. by means of frequency regulated motor for one chiller.
- Support will be a combination of grant (25%) and soft loan (75%).
- Payback terms for the loan part will be 5 equal installments in USD, first one due 6 months after completion of the project. Interest rate is 0%.

VERIFICATION REPORT FOR THE CFC CONSUMPTION IN TURKEY FOR 2002 AND 2003

PREPARED BY

Prof. Dr. A. Metin GER

KARAR Consultants Ltd.

September 2003

This report was prepared to document the findings of the series of tasks carried out for the verification of annual CFC (11, 12, and 502) consumption in Turkey for the years 2002 and 2003.

To this purpose,

- the Ministry of Environment,
- the CFC 11, 12 importer companies
- the CFC 502 importer companies (even though importation of the material is not permitted after 2002, interviews were made to check the sales and the stocks)
- a polyol supplier to the foam industry
- companies which completed or are carrying out MLF projects (present and past consumers)

were contacted. In Table 1, the details about the contacts are summarized.

Table 1. The contacts made for the verification report

Date of Visit	**Company**	**Person(s) Interviewed**	**Category**	**Mode of contact**
August 20, 2003	Ministry of Environment and Forestry, ANKARA	Mrs. Rezzan Katircioglu	Ministry	Interview
August 25, 2003	CETINEL Sogutma San. ve Tic. A.S. Kurabiye Sok. No:21 Beyoglu ISTANBUL Phone: 0 212 252 58 58 Fax: 0 212 251 75 19	Mr. Jirayir Dagdevirenel Mr. Sinan Ozkaratas	Importer CFC11 CFC12 CFC502	Interview
August 25, 2003	TERMO Sogutma San. Tic. A.S. Kurabiye Sok. No:21 Beyoglu ISTANBUL Phone: 0 212 252 58 58 Fax: 0 212 251 75 19	Mr. Jirayir Dagdevirenel Mr. Sinan Ozkaratas	Importer CFC11 CFC12 CFC502	Interview
August 25, 2003	ANATEKS Isitma ve Sog. Sis. San. Dis. A.S. Tarlabasi Cad. No: 80 Taksim ISTANBUL Phone: 0 212 256 00 33 Fax: 0 212 235 68 18	Mr. Metin Terzibasiogullari Ms. Hulya Kizir	Importer CFC12	Interview
August 25, 2003	TEKNION San. Mam. Paz. Tic. A.S. Tarlabasi Cad. No: 80 Taksim ISTANBUL Phone: 0 212 256 00 33 Fax: 0 212 235 68 18	Mr. Metin Terzibasiogullari Ms. Hulya Kizir	Importer CFC12	Interview
August 25, 2003	FLOGAZ Florlu Gazlar San. ve Tic. A.S. Yapi Kredi Plaza C Blok Kat 18 Levent IST Phone: 0 212 279 70 71 Fax: 0 212 279 07 36	Mr. Aksel Keribar	Importer CFC12	Interview
August 25, 2003	MESPA End. Paz. Ltd. Sti. Tarlabasi Cad. Yaya Alt. Geçidi No:1-3 Taksim ISTANBUL Phone: 0 212 235 70 64 Fax: 0 212 256 98 34	Mr. Taner Senkardes	Importer CFC12	Interview

August 26, 2003	SOGUK TEKNIK San ve Tic. A.S. Tarlabasi Cad. No: 48 Taksim ISTANBUL Phone: 0 212 250 05 72 Fax: 0 212 250 87 76	Mr. Murat Yılmaz Mr. Ali Turhan	Importer CFC11 CFC12 CFC502	Interview
August 26, 2003	TURA Sog. San. Tic. A.S. Dereboyu Cad. No: 27 Dolapdere ISTANBUL Phone: 0 212 237 50 00 Fax: 0 212 255 58 65	Mr. Murat Yılmaz Mr. Ali Turhan	Importer CFC11 CFC12 CFC502	Interview
August 26, 2003	BIRSAN Mak. San. Tic. A.S. Sadabat Cad. No: 6 Kagıthane ISTANBUL Phone: 0 212 294 11 00	Mr. Murat Yılmaz Mr. Ali Turhan	Importer CFC12	Interview
August 26, 2003	BIRMAK Sogutma. San. Tic. A.S. Sadabat Cad. No: 6 Kagıthane ISTANBUL Phone: 0 212 294 11 00	Mr. Murat Yılmaz Mr. Ali Turhan	Importer CFC12	Interview
August 26, 2003	CANTAS Ic ve Dis Tic. Sog. Sis. San. A.S. Dolapdere Cad., No:155 Pangalti ISTANBUL Phone: 0 212 232 91 22 Fax: 0 212 225 81 11	Mr. Erim Eksioglu	Importer CFC11 CFC12 CFC502	Interview
------	Uzman Demir Celik Sanayi A.S. Fazlipasa Cad. No:8 Topkapi ISTANBUL Phone: 0 212 567 65 63	Mr. Suat Yildiz	Importer CFC12	Contact cannot be established
------	TEKGAZ Tek. Gaz. ve Mal. San. Mum. A.S. Fazlipasa Cad. No:8 Topkapi ISTANBUL Phone: 0 212 567 65 63	Mr. Suat Yildiz	Importer CFC12	Contact cannot be established
August 27, 2003	TEKPOL Poliuretan San. Tic. A.S. Eski Ankara Cad. No: 54 Seyhli Pendik IST Phone: 0 216 378 64 51 Fax: 0 216 378 64 56	Ms. Nergis Demir Ms. Arzu Kapıkıran	Importer CFC11	Interview
August 27, 2003	ELASTOGRAN Poliuretan San. ve Tic. Ltd. Sti. Eski Ankara Cad. No:54 Seyhli, Pendik ISTANBUL Phone: 0 216 378 64 43 Fax: 0 216 378 64 56	Ms. Nergis Demir Ms. Binnur Tulumbacı	Polyol Supplier	Interview
September 1, 2003	AKCAY Sogutma, Klima ve Havalandırma San. Tic. Ltd. Sti Trabzon Organize Sanayi Bölgesi, Arsin, TRABZON Phone: 0.462.223.26.58 Fax: 0.462.223.03.75	Mr. Serdar Akcay Mr. Kadir Akcay Mr. Ahmet Salih Akcay	Ongoing MLF project	Fax
September 1, 2003	EKOSAN Mutfak ve Sogutma	Mr. M. Serdar Koç	Ongoing	Fax

	Ekipmanlari San. ve Tic. Ltd. Sti. Küçükbalikli Mahallesi, Fevzibey Caddesi No:25, BURSA Phone: 0.224.215.92.00/01 Fax: 0.224. 215.92.02	Mr. Vehbi Varlik	MLF project	
September 1, 2003	CAPRI Sogutma San. ve Tic. Ltd. Sti. Cali Sanayi Bolgesi, Cakalinleri Sok., No:8, Cali, BURSA Phone: 0.224.271.01.50/51/52 Fax: 0.224.482.39.13/14	Mr. Mehmet Topak Ms. Ayse Topak	Ongoing MLF project	Fax
September 1, 2003	TEKNIK SOGUTMA Yenimahalle, 643 Sok., No:18, MERSIN Phone: 0.324.231.46.91 0.324.233.73.36 Fax: 0.324.232.09.04	Mr. Abdulkadir Kil	Ongoing MLF project	Fax
September 1, 2003	DORT MEVSIM Isıtma Sogutma Ins. Taah. San. ve Tic. Ltd. Sti. 1145/9 Sok., No:3/D 35110 Yenisehir, IZMIR Phone: 0.232.459.65.01 0.232.469.25.22 0.232.231.84.22 Fax: 0.232.459.65.19	Mr. Yilmaz Pala	Ongoing MLF project	Fax

During these visits, except the one with Ms. Rezzan Katircioglu of Ministry of Environment and Forestry, the import licenses and custom records were collected/reviewed, quotas and realized import amounts were determined, the sources of import were questioned, the sales and stocks were determined, and the general comments of the persons interviewed on different aspects of the quota system, illegal imports, etc. were taken. It must be noted that the data on the sales and stocks were provided by the importer companies themselves and could not be double-checked due to time limitation. The outputs based on these data/information were organized in a way to verify the annual CFC (11, 12, and 502) consumption in Turkey for the years 2002 and 2003 and assess the strengths and weaknesses of the present quota system in the following sections.

During the interviews, the copies of the import licenses were obtained and reviewed. The import figures gathered from the importer company records were also compared with the records of the Custom Office and the Ministry of the Environment for confirmation. The import amounts from all these sources (company, Custom Office and the Ministry of the Environment's records) were in good agreement.

The Tables 2-5 summarizes the import licenses and realized import figures for CFC11 and CFC12 for 2002 and 2003.

Table 2. The Import License and Realized Import Amounts of CFC11 for 2002

THE IMPORT LICENSE (QUOTA) AND IMPORT REALIZATION IN KGS FOR CFC11 FOR 2002					
COMPANY	COUNTRY OF IMPORT	LICENSE NUMBER	IMPORT LICENSE / QUOTA (kg)	REALIZATION source MoEF (kg)	REALIZATION source company (kg)
CANTAS İç ve Dış Tic. Soğ. Sis. San. A.Ş.	GREECE	169	79754,0	18000,0	18000,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	BELGIUM	172	34094,0	24640,0	24640,0
SOĞUK TEKNİK San ve Tic. A.Ş.	ITALY	168	34352,0	19200,0	19200,0
TEKGAZ Tek. Gaz. ve Mal. San. Mum. A.Ş.	-	170	12500,0	0,0	0,0
TEKPOL Poliüretan San. Tic. A.Ş.	-	171	76800,0	0,0	0,0
UZMAN Demir Çelik Sanayi A.Ş.	-	167	12500,0	0,0	0,0
TOTAL			250000,0	61840,0	61840,0

Table 3. The Import License and Realized Import Amounts of CFC11 for 2003, as of 31st August.

THE IMPORT LICENSE (QUOTA) AND IMPORT REALIZATION IN KGS FOR CFC11 FOR 2003					
COMPANY	COUNTRY OF IMPORT	LICENSE NUMBER	IMPORT LICENSE / QUOTA (kg)	REALIZATION source MoEF (kg)	REALIZATION source company (kg)
CANTAS İç ve Dış Tic. Soğ. Sis. San. A.Ş.	GREECE	222	50000,0	-	36000,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	ITALY	217	24983,0	19040,0	19040,0
TEKPOL Poliüretan San. Tic. A.Ş.	GERMANY	218	57120,0	-	38080,0
TERMO Soğutma San. Tic. A.Ş.	ITALY	216	11897,0	11760,0	11760,0
TURA Soğ. San. Tic. A.Ş.	SPAIN	220	2000,0	-	2000,0
TOTAL			146000,0	30800,0	106880,0

Table 4. The Import License and Realized Import Amounts of CFC12 for 2002

THE IMPORT LICENSE (QUOTA) AND IMPORT REALIZATION IN KGS FOR CFC12 FOR 2002					
COMPANY	COUNTRY OF IMPORT	LICENSE NUMBER	IMPORT LICENSE / QUOTA (kg)	REALIZATION from MoEF (kg)	REALIZATION from Company (kg)
ANATEKS Isıtma ve Soğ. Sis. San. Diş. A.Ş.	ENGLAND	181	29875,0	29866,0	29866,0
BİRSAN Mak. San. ve Tic. A.Ş.	-	-	10000,0	9996,0	9996,0
CANTAS İç ve Diş Tic. Soğ. Sis. San. A.Ş.	GREECE	179	150647,0	150647,5	150647,5
ÇETİNEL Soğutma San. ve Tic. A.Ş.	BELGIUM	185	78043,0	78036,8	78036,8
FLOGAZ Florlu Gazlar San. ve Tic. A.Ş.	ENGLAND	182	98246,0	84320,0	84320,0
MESPA End. Paz. Ltd. Şti.	INDIA	178	75292,0	75276,0	75276,0
SOĞUK TEKNİK San ve Tic. A.Ş.	ITALY	176	113191,0	113180,0	113180,0
TEKGAZ Tek. Gaz. ve Mal. San. Mum. A.Ş.	INDIA, SPAİN, ENGLAND	173	36662,0	36448,0	36448,0
TEKNİON San. Mam. Paz. Tic. A.Ş.	ENGLAND	180	19946,0	19938,0	19938,0
TERMO Soğutma San. Tic. A.Ş.	BELGIUM	183	12871,0	12865,6	12865,6
TURA Soğ. San. Tic. A.Ş.	ITALY	184	13790,0	13776,8	13776,8
UZMAN Demir Çelik Sanayi A.Ş.	INDIA, SPAİN, ENGLAND	175	11478,0	10880,0	10880,0
TOTAL			650041,0	635230,7	635230,7

Table 5. The Import License and Realized Import Amounts of CFC12 for 2003, as of 31st August.

THE IMPORT LICENSE (QUOTA) AND IMPORT REALIZATION IN KGS FOR CFC12 FOR 2003					
COMPANY	COUNTRY OF IMPORT	LICENSE NUMBER	IMPORT LICENSE / QUOTA (kg)	REALIZATION from MoEF (kg)	REALIZATION from Company (kg)
ANATEKS Isıtma ve Soğ. Sis. San. Diş. A.Ş.	ITALY	236	14531,0	0,0	14524,8
BİRMAK Soğutma San. ve Tic. A.Ş.	SPAIN	234	2000,0	0,0	1992,2
BİRSAN Mak. San. ve Tic. A.Ş.	SPAIN	233	3621,0	0,0	3917,6
CANTAS İç ve Diş Tic. Soğ. Sis. San. A.Ş.	GREECE	232	79796,0	79796,0	79796,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	ITALY	231	39608,0	31824,0	31824,0
FLOGAZ Florlu Gazlar San. ve Tic. A.Ş.	FRANCE	229	50360.8	50360,8	50360,8
MESPA End. Paz. Ltd. Şti.	SPAIN	227	35906,0	0,0	32640,0
SOĞUK TEKNİK San ve Tic. A.Ş.	ITALY	230	55483,0	0,0	35890,0
TEKGAZ Tek. Gaz. ve Mal. San. Mum. A.Ş.	-	228	17783,0	0,0	0,0
TEKNİON San. Mam. Paz. Tic. A.Ş.	-	226	8781,0	0,0	0,0
TERMO Soğutma San. Tic. A.Ş.	-	225	5539,0	0,0	0,0
TURA Soğ. San. Tic. A.Ş.	ITALY	224	6151,0	0,0	6147,2
TOTAL			269199,0	161980,8	257092,6

In Table 6, the import licenses and realized import figures for CFC502, are summarized only for 2002, since the import of CFC502 is not permitted beginning from 2003.

Table 6. The Import License and Realized Import Amounts of CFC502

THE IMPORT LICENSE (QUOTA) AND IMPORT REALIZATION IN KGS FOR CFC502 FOR 2002					
COMPANY	COUNTRY OF IMPORT	LICENSE NUMBER	IMPORT LICENSE / QUOTA (kg)	REALIZATION soource MoEF (kg)	REALIZATION source company (kg)
BİRMAK Soğutma San. ve Tic. A.Ş.	-	-	500,0	0,0	-
BİRSAN Mak. San. ve Tic. A.Ş.	-	-	500,0	0,0	-
CANTAS İc ve Diş Tic. Soğ. Sis. San. A.Ş.	CHINA	191	1889,0	1876,0	1876,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	BELGIUM	192	2037,0	2026,4	2026,4
SOĞUK TEKNİK San ve Tic. A.Ş.	ITALY	197	8551,0	1360,0	1360,0
TERMO Soğutma San. Tic. A.Ş.	BELGIUM	193	500,0	489,6	489,6
TURA Soğ. San. Tic. A.Ş.	-	195	4022,0	0,0	-
TOTAL			17999,0	5752,0	5752,0

As depicted in Tables 2, 4, and 6the agreement between the realizations as reported by MoEF and importers/companies, for the year 2002, is 100%. Yet, for the year 2003, there is a disagreement between the realizations as reported by MoEF and importers/companies as depicted in Tables 3 and 5. This is due the fact that there is a time lag of 1 to 3 months between the import of the materials by the importers/companies and receipt and processing of this information by Customs and MoEF. However, a verification study that will be carried after March 2004, will prove that the agreement between the realizations reported by MoEF and importers/companies for the year 2003 is acceptable, if not 100%, as is the case for the year 2002.

The import license (quota) and realized import amounts, and ratio of realized import to quota were given in Table 7.

Table 7. The Import License and Realized Import Amounts of CFC11, CFC12, and CFC502

	2001			2002			2003		
	QUOTA (kgs)	IMPORT (kgs)	IMPORT (% of quota)	QUOTA (kgs)	IMPORT (kgs)	IMPORT (% of quota)	QUOTA (kgs)	IMPORT (kgs)	IMPORT (% of quota)
CFC11	260040,0	108500,0	41,7	255000,0	61840,0	24,3	146000,0	106880,0	73,2
CFC12	700000,0	662810,0	94,7	650041,0	635230,7	97,7	269199,0	257092,6	95,5
CFC502	-	6868,0	#	17999,0	5752,0	32,0	-	-	-

There is no quota to compare and/or all imports were realized prior to the quota limitations

Examination of the percentage realization of CFC11 and CFC12, one may conclude that the market is adapting to the quota system well. It is clear from Table 7 that the quota values set for CFC 11 are well over the Turkey's need; the ratio of realized import to quota for CFC11 changes between 24.3% to 73.2% of the quota of the respective years with an average value of almost 50% of the quota. The import realization for CFC12 is almost 100% of the quota, ranging between 94.7% to 97.7% of the quota of the respective year. This may be due to the fact that CFC11 and CFC12 are consumed for different purposes. While CFC11 is used mostly for foam productions for which there are feasible alternative technologies of production, CFC12 is still in demand for the service of coolers and refrigerators of former technologies. Furthermore, it is worth noting that the company officials stated that CFC12 is the only CFC in the quota system the demand for which is higher than the quota. Note that the quota system was implemented on May 2002 for CFC502 and the import figures for CFC502 before the implementation of the quota system in May 2002 are not covered in this report mainly due to the difficulty of collecting consistent and reliable data during the time frame of the study.

Furthermore, any source of CFC import other than the legally permitted sources was investigated during the interviews conducted at the importer companies; there was no evidence of illegal import of CFC.

During the company visits, the stocks of the companies were also recorded for January 1, 2002 and 2003 and as of August 31st 2003 and tabulated in Table 8-10.

Table 8. The stocks and sales for CFC11 for 2002 and 2003

COMPANY	STOCK AS OF 01.01.2002	TOTAL IMPORT DURING 2002 (kg)	OTHER PROCURE-MENTS DURING 2002 (kg)	TOTAL SALES DURING 2002 (kg)	STOCK AS OF 01.01.2003	TOTAL IMPORT DURING 2003 (kg)	OTHER PROCURE-MENTS DURING 2003 (kg)	TOTAL SALES DURING 2003 (kg)	STOCK AS OF 31.07.2003	BALANCE
CANTAS İç ve Dış Tic. Soğ. Sis. San. A.Ş.	0,0	18000,0	0,0	18000,0	0,0	36000,0	0,0	24000,0	12000,0	0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	324,0	24640,0	0,0	21751,6	9638,9	19040,0	0,0	32634,0	7735,0	-18117
SOĞUK TEKNİK San ve Tic. A.Ş.	0,0	19200,0	0,0	19200,0	0,0	0,0	0,0	0,0	0,0	0
TEKPOL Poliüretan San. Tic. A.Ş.	54600,0	0,0	0,0	44100,0	10500,0	38080,0	0,0	26740,0	21840,0	0
TERMO Soğutma San. Tic. A.Ş.	15680,0	8595,0	0,0	0,0	0,0	11760,0	0,0	11760,0	0,0	24275
TURA Soğ. San. Tic. A.Ş.	612,0	0,0	21569,6	10716,8	11464,8	0,0	0,0	6582,4	4882,4	0

Table 9. The stocks and sales for CFC12 for 2002 and 2003

COMPANY	STOCK AS OF 01.01.2002	TOTAL IMPORT DURING 2002 (kg)	OTHER PROCURE-MENTS DURING 2002 (kg)	TOTAL SALES DURING 2002 (kg)	STOCK AS OF 01.01.2003	TOTAL IMPORT DURING 2003 (kg)	OTHER PROCURE-MENTS DURING 2003 (kg)	TOTAL SALES DURING 2003 (kg)	STOCK AS OF 31.07.2003	BALANCE
ANATEKS Isıtma ve Soğ. Sis. San. Diş. A.Ş.	2584,0	29866,0	0,0	16864,0	15585,6	14524,8	0,0	16864,0	8160,0	5086,8
BİRMAK Soğutma San. ve Tic. A.Ş.	0,0	0,0	0,0	0,0	0,0	1999,0	0,0	1999,2	0,0	-0,2
BİRSAN Mak. San. ve Tic. A.Ş.	0,0	9996,0	0,0	9996,0	0,0	3617,6	0,0	3617,6	0,0	0,0
CANTAS İç ve Diş Tic. Soğ. Sis. San. A.Ş.	0,0	150647,5	0,0	150647,5	0,0	79796,0	0,0	79796,0	0,0	0,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	3890,0	78036,8	0,0	83816,8	367,2	31824,0	0,0	81994,0	2216,8	-54276,8
FLOGAZ Florlu Gazlar San. ve Tic. A.Ş.	53108,0	84320,0	0,0	82724,0	35170,0	50360,8	0,0	31050,0	54440,8	19574,0
MESPA End. Paz. Ltd. Şti.	1523,0	75276,0	0,0	98042,0	612,0	32640,0	13200,0	44961,0	1686,0	-22050,0

SOĞUK TEKNİK San ve Tic. A.Ş.	1849,6	113179,2	12852,0	127812,8	68,0	35890,0	5752,8	39589,6	2121,6	-0,4
TEKGAZ Tek. Gaz. ve Mal. San. Mum. A.Ş.	!	36448,0	!	!	!	0,0	!	!	!	!
TEKNİON San. Mam. Paz. Tic. A.Ş.	4950,0	19938,0	15803,0	39712,0	979,2	0,0	18373,6	19352,8	0,0	-0,2
TERMO Soğutma San. Tic. A.Ş.	367,0	12865,6	0,0	12865,6	0,0	0,0	0,0	0,0	0,0	367,0
TURA Soğ. San. Tic. A.Ş.	17544,0	13776,8	75833,6	107154,0	0,0	6147,2	33578,4	35849,6	3876,0	0,4
UZMAN Demir Çelik Sanayi A.Ş.	!	10880,0	!	!	!	0,0	!	!	!	!

! No contact could have been made

Procurements of CFC12 listed above other than the quotas were found to be domestic exchange between the sister companies such as Anateks-Termo Sogutma, and Birsan-Birmak-Tura-Soguk Teknik.

Table 10. The stocks and sales for CFC502 for 2002 and 2003

COMPANY	STOCK AS OF 01.01.2002	TOTAL IMPORT DURING 2002 (kg)	OTHER PROCURE-MENTS DURING 2002 (kg)	TOTAL SALES DURING 2002 (kg)	STOCK AS OF 01.01.2003	TOTAL SALES DURING 2003 (kg)	STOCK AS OF 31.07.2003	BALANCE
CANTAS İc ve Diş Tic. Soğ. Sis. San. A.Ş.	0,0	1876,0	0,0	1876,0	0,0	0,0	0,0	0,0
ÇETİNEL Soğutma San. ve Tic. A.Ş.	1659,0	2026,4	0,0	1564,0	391,2	1068,0	1128,8	-75,4
SOĞUK TEKNİK San ve Tic. A.Ş.	27,0	1360,0	2053,6	2162,4	1278,4	380,0	897,6	0,6
TERMO Soğutma San. Tic. A.Ş.	0,0	489,6	0,0	489,6	0,0	0,0	0,0	0,0
TURA Soğ. San. Tic. A.Ş.	612,0	0,0	21569,6	10716,8	11464,8	6582,4	4882,4	0,0

In evaluating the balances between the realized import amounts, stocks and the sales for 2003, it must be noted that this report does not cover the last three months of the year. A verification report to cover 2003 as a whole must be conducted on March 2004, the earliest. In evaluating the results given in Tables 1-10, it is worth noting that all the sales and stock records were provided by the companies and cannot be double-checked by reviewing their records. This is simply due to the fact that, as seen in Table 1, within a very short period of time, effectively 2 ½ days, there were quite a few companies visited such that on the average 1 ½ hours were spent per visit. Therefore, the existing imbalances for some of the companies must further be investigated with a more comprehensive study.

Based on the data presented in Tables 2-10, it is possible to drive some conclusions.

- Examination of the percentage realization of CFC11 and CFC12, one may conclude that the market is adapting to the quota system well.
- The quota values set for CFC 11 are greater than the need suggesting that the alternative technologies and/or materials have diminished the demand for CFC11.
- The import realization for CFC12 is almost 100% of the quota, suggesting that CFC12 will be still in demand for the service of coolers and refrigerators of former technologies, for some time in the future.
- Note that the amount of reported sales of CFC-502 is larger than the total quotas. This is due to import of these materials prior to the implementation of quotas.

Furthermore, any source of CFC import other than the legally permitted sources was investigated during the interviews conducted at the importer companies; there was no evidence of illegal import of CFC.

Polyol suppliers and consumers have also been contacted. ELASTOGRAN Poliuretan San. ve Tic. Ltd. Sti., an example of polyol supplier to the foam industry, was the only one visited while others were reached by using some other means. ELASTOGRAN imports a small amount, only 10% of their polyol consumption preblended, while they blend 90% of it with HCFC. Ms. Nergis Demir and Ms. Binnur Tulumbacı of ELASTOGRAN stated that Huntsman-Shell imports all its consumption as preblended from Italy. Moreover, a fax message from Shell-Turkey stated that Shell has no CFCs in any of its products.

The companies which completed or are carrying out MLF projects (present and past consumers) were also contacted in order to confirm whether the market are procuring from the legal importers. The companies contacted were also listed in Table 1. Among five of these companies, only Teknik Sogutma used, for service purposes, total of 285 kg of CFC12 during 2002 and 2003 to date. The origin of the material is Tura Sogutma San. ve Tic. Sti., a legal importer.

During the company visits, the persons interviewed stated their general comments of on different aspects of the quota system, illegal imports, etc. These comments are summarized below:

- For CFC12 a greater portion of the imported amount is used by small scale service providers rather than in manufacturing industry. This is due to large number of refrigerators in use which use CFC12; this demand for CFC12 for servicing is not expected to decrease significantly in the near future.

- Companies with completed or ongoing MLF projects use almost no CFC11, 12 or 502 for production purposes.

- The smaller foam producers are suspected to use CFC11. It is understood that large foam manufacturers, if not already use water or pentane based technologies, use HCFC.

- There is an illegal transport of CFC12 into Turkey. This illegal traffic into the country is suspected to be mainly from the Southeastern border via Syria. It is claimed to be mostly from India. Another suspected illegal input is from Dubai.

- It is believed that illegally imported CFC's are mostly manufactured in India. Yet, it is suggested that there are illegal imports of origin of Italy, Germany and USA.

- The most common mode of the illegal transport of CFC12 is by passenger busses in disposable containers (Atoken-France and Refron-India). Some of the containers are not labeled at all. Some of them are labeled as generic refrigerant. The labels may also be in Arabic.

- The price of the illegally imported CFC12 is compatible with that of legally imported CFC12 while the CFC12 alternatives are relatively expensive.

- Five Turkish importer companies filed a complaint in 1999 to let the Turkish legal authorities know this situation and make them take the necessary precautions to prevent this illegal input. Yet, as stated, the situation did not change and the illegal input of CFC12 is still a reality.

- It is also stated that the rate of this illegal import gets higher especially towards the end of the year when the quota limits get lower.

- The illegal input is mainly consumed locally in the South East region.

- Even though there are no concrete figures, the total amount is thought to be significant and may be about 35% of the quotas.

- It is suggested that illegal traffic of CFC's into Turkey can be stopped if the use of disposable containers is banned as is the case in Europe.

- Some importer company officials pointed out that a considerable amount of CFCs are imported to free zones in Turkey which are not covered in the quota system. Then, they are sold to countries like Bulgaria, Kosova, Azerbaijan, Romania, etc.

- Some of the CFC12 which is imported legally under the quota system to Turkey is exported mainly to Bulgaria and some other European countries.