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COMITÉ EJECUTIVO DEL FONDO MULTILATERAL
PARA LA APLICACIÓN DEL
PROTOCOLO DE MONTREAL
Octogésima tercera Reunión
Montreal, 27 – 31 de mayo de 2019

Addendum

INFORMES SOBRE PROYECTOS CON REQUISITOS ESPECÍFICOS DE PRESENTACIÓN DE INFORMES

1. El presente addendum se publica para incluir informes sobre los proyectos con requisitos específicos de presentación de informes correspondientes a China.

2. El documento se divide en las siguientes partes:

Parte I: Examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales con arreglo a los acuerdos sobre los planes de gestión de eliminación del consumo y de la producción de HCFC (decisiones 82/65 y 82/71 a)) (PNUD, PNUMA, ONUDI y Banco Mundial)

Parte II: Estudio teórico sobre el sistema actual de supervisión del consumo de agentes espumantes en las empresas que recibieron asistencia en la etapa I del plan de gestión de eliminación de HCFC y metodología de verificación (decisión 82/67 c)) (Banco Mundial)

Parte III: Informes de auditoría financiera para los sectores de producción de CFC, halones, espumas de poliuretano, agentes de procesos II, servicio y mantenimiento de refrigeración y disolventes (decisión 82/17) (PNUD, PNUMA, ONUDI y Banco Mundial)

Parte IV: Plan sectorial para la eliminación del consumo de metilbromuro (decisión 82/18 c)) (ONUDI)

Parte V: Plan sectorial para la eliminación de la producción de metilbromuro (decisión 82/19 c) y d)) (ONUDI)

3. Cada parte presenta una descripción breve del informe o los progresos logrados en la ejecución de los proyectos y las observaciones y recomendaciones de la Secretaría.

Antecedentes del addendum

4. Los informes que figuran en el presente documento se presentan en respuesta a decisiones específicas del Comité Ejecutivo adoptadas en la 82ª reunión.

I. Examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales con arreglo a los acuerdos sobre los planes de gestión de eliminación del consumo y de la producción de HCFC (decisiones 82/65 y 82/71 a)) (PNUD, PNUMA, ONUDI y Banco Mundial)

5. En la 82ª reunión, el Comité Ejecutivo examinó los informes anuales sobre la marcha de las actividades de la etapa I del plan de gestión de eliminación de HCFC (PGEH) para China[1] y las solicitudes para los terceros tramos de cuatro[2] planes sectoriales de la etapa II del PGEH[3]. Durante las deliberaciones en un grupo de contacto, varios miembros expresaron serias preocupaciones sobre la aprobación de financiación adicional en la reunión considerando las emisiones no explicadas de CFC-11 en Asia Oriental. También se expresó preocupación acerca de la información confiable pero incompleta acerca de las posibles cuestiones relacionadas con el cumplimiento; uno de los miembros recordó que el Gobierno de China había reconocido, en la 30ª Reunión de las Partes, que había identificado producción ilícita de CFC-11. De conformidad con la decisión XXX/3, se había solicitado más información sobre la causa de las emisiones de CFC-11, y se sugirió que las solicitudes de financiación se aplazaran hasta una reunión subsiguiente, cuando hubiera más información disponible. Otros miembros dijeron que era necesario actuar con cautela y que cualquier decisión de aplazar la financiación solicitada en la reunión no debería poner en riesgo el objetivo de reducción de 2020 para China. Las investigaciones en curso sobre la causa de las emisiones de CFC-11 implicaban que el Comité Ejecutivo debía ser prudente en sus conclusiones. La recopilación de toda la información pertinente podría demorar varios años y era importante saber con claridad qué información se requería y qué cronograma se consideraba para recopilarla.

6. Tras esas deliberaciones, el Comité Ejecutivo decidió pedir al Gobierno de China que, por conducto del organismo de ejecución pertinente, presentara, en la 83ª reunión, un examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales con arreglo a sus Acuerdos con el Comité Ejecutivo sobre el PGEH y el plan de gestión de eliminación de la producción (PGEPH) del país, que incluya información sobre la estructura organizacional y capacidad de nivel nacional y local que demuestre de qué manera se estaba garantizando la sostenibilidad a largo plazo de la eliminación de los HCFC en los sectores de consumo y producción, así como sobre los esfuerzos para hacer frente a cualquier comercio ilícito de esas sustancias. El Comité Ejecutivo también pidió que se presentara un informe sobre la marcha de las actividades relativo a las medidas adoptadas con miras a fortalecer la legislación sobre las sustancias que agotan la capa de ozono (SAO) y la observancia de esta en China (decisiones 82/65 y 82/71 a)).

7. En la Parte I del presente documento se tratan el examen y el informe sobre la marcha de las actividades.

8. En la 82ª reunión, el Comité Ejecutivo también examinó un documento con una nota de la Secretaría[4] sobre cuestiones relacionadas con lo siguiente: eficiencia energética; directrices sobre los costos para la reducción de los HFC; y el aumento de las emisiones mundiales de CFC-11. Tras las deliberaciones, el Comité, entre otras cosas, pidió a la Secretaría que elaborara un documento, para que fuera examinado en la 83ª reunión, en el que incluya una reseña de los sistemas vigentes de supervisión, presentación de informes, verificación y concesión de licencias y cupos exigibles, incluidos los requisitos y las prácticas de

[1] Párrafos 48 a 140 del documento UNEP/OzL.Pro/ExCom/82/45.

[2] El plan para el sector de espumas de poliestireno extruido, el plan para el sector de refrigeración y aire acondicionado industrial y comercial, el plan para el sector de servicio y mantenimiento de equipos de refrigeración y el programa de facilitación y el plan para el sector de disolventes.

[3] Párrafos 141 a 212 del documento UNEP/OzL.Pro/ExCom/82/45.

[4] UNEP/OzL.Pro/ExCom/82/70.

los sistemas para presentar informes al Comité Ejecutivo que se habían elaborado con apoyo del Fondo Multilateral (decisión 82/86 c)).

9. En respuesta a la decisión 82/86 c), la Secretaría presentó a la 83ª reunión el documento UNEP/OzL.Pro/ExCom/83/38, que se tratará en relación con la cuestión 10 del orden del día. El Comité Ejecutivo tal vez desee tomar nota de que ese documento describe los sistemas de supervisión, presentación de informes, verificación y concesión de licencias y cupos exigibles y podría resultar útil para examinar el informe presentado por el Gobierno de China con arreglo a las decisiones 82/65 y 82/71 a).

II. Estudio teórico sobre el sistema actual de supervisión del consumo de agentes espumantes en las empresas que recibieron asistencia en la etapa I del plan de gestión de eliminación de HCFC y metodología de verificación (decisión 82/67 c)) (Banco Mundial)

10. Durante las deliberaciones acerca del informe anual sobre la marcha de las actividades del plan para el sector de espumas de poliuretano (PU)[5], un miembro manifestó que, en particular para el sector de espumas de PU rígido, se debía fortalecer la verificación de admisibilidad a fin de corroborar que las empresas no hubieran modificado sus prácticas, lo que podría afectar su admisibilidad para recibir apoyo del Fondo Multilateral. Dicha verificación se recomendaba como una buena práctica sectorial y como una forma de extraer enseñanzas y además responder a la información que figuraba en los párrafos 24 y 58 del documento UNEP/OzL.Pro/ExCom/82/20[6], incluido el uso no autorizado de CFC y HCFC. Otro de los miembros manifestó que era necesario fortalecer la verificación y elaborar un plan integral de supervisión y observancia.

11. Por consiguiente, el Comité Ejecutivo, entre otras cosas, pidió al Gobierno de China y al Banco Mundial que prepararan, para la 83ª reunión, un estudio teórico sobre el sistema actual de supervisión del consumo de agentes espumantes en las empresas que recibieron asistencia en la etapa I del plan de gestión de eliminación de HCFC (PGEH) y una metodología de verificación que incluya muestreos aleatorios destinados a verificar si se habían consumido o se estaban consumiendo en esas empresas las SAO que ya se habían eliminado (decisión 82/67 c)).

12. El estudio teórico sobre el sector de espumas de PU se trata en la Parte II del presente documento.

III. Informes de auditoría financiera para los sectores de producción de CFC, halones, espumas de poliuretano, agentes de procesos II, servicio y mantenimiento de refrigeración y disolventes (decisión 82/17) (PNUD, PNUMA, ONUDI y Banco Mundial)

13. En la 82ª reunión[7], el Gobierno de China presentó, por conducto de los organismos bilaterales y de ejecución pertinentes, informes finales sobre la marcha de las actividades, investigaciones pertinentes, informes de asistencia técnica e informes de auditoría financiera que incluyen los intereses devengados durante la ejecución de los planes para los sectores de producción de CFC, halones, espumas de poliuretano (PU), agentes de procesos II, servicio y mantenimiento de refrigeración y disolventes. El Comité Ejecutivo decidió aplazar, hasta su 83ª reunión, el examen de los informes de auditoría financiera de China (decisión 82/17).

14. Los informes de auditoría financiera se tratan en la Parte III del presente documento.

[5] Párrafos 83 a 101 del documento UNEP/OzL.Pro/ExCom/82/45.
[6] Informes sobre los proyectos con requisitos específicos de presentación de informes.
[7] Párrafos 4 a 74 del documento UNEP/OzL.Pro/ExCom/82/20.

IV. Plan sectorial para la eliminación del consumo de metilbromuro (decisión 82/18 c)) (ONUDI)

15. En la 82ª reunión, el Comité Ejecutivo examinó el informe sobre la marcha de las actividades relativo a la ejecución de la fase II del plan nacional para la eliminación del consumo de metilbromuro (MB) en China[8]. El Comité Ejecutivo decidió pedir al Gobierno de China y la ONUDI que presentaran a la 83ª reunión el informe final de la etapa II del plan nacional de eliminación de metilbromuro en China (decisión 82/18 c)).

16. El informe final del plan sectorial de consumo de MB se trata en la Parte II del presente documento.

V. Plan sectorial para la eliminación de la producción de metilbromuro (decisión 82/19 c) y d)) (ONUDI)

17. En la 82ª reunión, el Comité Ejecutivo examinó el informe sobre la situación de la ejecución del plan sectorial para la eliminación de la producción de MB en China[9]. Tras las deliberaciones, el Comité Ejecutivo decidió, entre otras cosas, pedir al Gobierno de China, por conducto de la ONUDI, que presente un informe sobre la marcha de las actividades en la 83ª reunión en relación con el contrato para el desarrollo del sistema de información sobre la gestión y su incorporación en el programa de vigilancia y supervisión que pondrá en práctica la autoridad aduanera, así como información actualizada del plan de trabajo para garantizar la supervisión sostenida a largo plazo del MB tras la terminación del plan sectorial de eliminación de la producción de MB, lo que incluye la elaboración de una política y de arreglos institucionales que demuestren el cumplimiento, la supervisión y la aplicación (decisión 82/19 c) y d)).

18. El informe y la información actualizada sobre el plan de trabajo para el plan sectorial de producción de MB se tratan en la Parte V del presente documento.

[8] Párrafos 79 a 89 del documento UNEP/OzL.Pro/ExCom/82/20.
[9] Párrafos 90 a 108 del documento UNEP/OzL.Pro/ExCom/82/20.

PARTE I: EXAMEN DE LOS SISTEMAS DE SUPERVISIÓN, PRESENTACIÓN DE INFORMES, VERIFICACIÓN Y OBSERVANCIA ACTUALES CON ARREGLO A LOS ACUERDOS CON EL COMITÉ EJECUTIVO SOBRE EL PLAN DE GESTIÓN DE ELIMINACIÓN DEL CONSUMO Y LA PRODUCCIÓN DE HCFC (DECISIONES 82/65 Y 82/71 a)) (PNUD, PNUMA, ONUDI Y BANCO MUNDIAL)

Antecedentes

19. En nombre del Gobierno de China, el PNUD, en su calidad de organismo de ejecución principal para el plan de gestión de eliminación de HCFC (PGEH), ha presentado un informe sobre el examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales del Gobierno de China con arreglo a los acuerdos del plan de gestión de eliminación del consumo y la producción de HCFC. El informe incluye tanto el examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales del Gobierno de China con arreglo a los acuerdos del PGEH y el PGEPH como el informe sobre la marcha de las actividades relativo a las medidas adoptadas con miras a fortalecer la legislación sobre las SAO y la observancia de esta, como se solicita en las decisiones 82/65 y 82/71 a).

20. El informe, que se adjunta en forma completa al presente documento, tiene cinco capítulos:

Capítulo 1 Antecedentes y objetivos

Capítulo 2 Marco de cumplimiento, incluidos el sistema de gestión de SAO, leyes y reglamentos

Capítulo 3 Supervisión y presentación de informes en el marco del PGEH y el PGEPH del Gobierno de China, y esfuerzos para abordar el comercio ilícito y garantizar la sostenibilidad a largo plazo de la eliminación de los HCFC

Capítulo 4 Examen de la observancia en relación con las SAO, identificación de dificultades y plan de acción del Gobierno de China para fortalecer la legislación y su aplicación

Capítulo 5 Dificultades para satisfacer los próximos objetivos de cumplimiento y necesidad de que se aprueben los tramos del PGEH y el PGEPH

Observaciones de la Secretaría

21. La Secretaría tomó nota con reconocimiento del informe presentado por el Gobierno de China por conducto del PNUD. La Secretaría examinó el informe y pidió más información y aclaraciones acerca de los sistemas de supervisión, presentación de informes, verificación y observancia actuales y las medidas que el Gobierno de China ha adoptado o tiene intención de adoptar para fortalecer la legislación sobre SAO y la observancia de esta.

22. Durante las discusiones, se proporcionaron aclaraciones relativas a muchas de las observaciones planteadas y se presentó información adicional, que el PNUD luego incorporó en el informe revisado presentado por el Gobierno de China, que se adjunta en el Anexo I del presente documento. Por lo tanto, el presente documento incluye únicamente los aspectos de la discusión que proporcionan elementos adicionales que podrían ayudar al Comité Ejecutivo en sus deliberaciones sobre este asunto.

23. Las observaciones de la Secretaría se dividen en tres secciones:

a) Observaciones generales relativas a lo siguiente: vigilancia atmosférica, laboratorios de prueba, fortalecimiento de las inspecciones y la observancia, colaboración con la industria

y otros interesados directos, sanciones para los usuarios, gestión de las fuentes, lecciones aprendidas de las medidas de observancia de la ley, supervisión del tetracloruro de carbono (CTC), facilitación de la notificación de faltas de cumplimiento de los reglamentos e imposición de sanciones a los usuarios finales;

b) Aclaraciones técnicas relacionadas con la supervisión y la presentación de informes en el marco del PGEH y el PGEPH; e

c) Informes sobre producción ilícita de sustancias controladas.

Observaciones generales

24. En la sección siguiente, la Secretaría destaca las iniciativas propuestas por el Gobierno de China que fortalecerían los sistemas de supervisión, presentación de informes, verificación y observancia y, en algunos casos, formula observaciones acerca de cómo se podrían fortalecer aún más esos sistemas.

Vigilancia atmosférica de las SAO[10]

25. El Ministerio de Ecología y Medio Ambiente (MEE, por sus siglas en inglés) incorporará las SAO, así como los HFC, en su red de vigilancia atmosférica. El MEE trabajará con la Administración Meteorológica de China y otras organizaciones para desarrollar y gestionar conjuntamente la red de vigilancia.

26. En China, hay más de 1 000 estaciones de vigilancia de la calidad del aire; presumiblemente, se requerirían instrumentos para medir las SAO (y los HFC) solo en una parte de esas estaciones. El Gobierno de China prevé proceder en forma gradual, realizando primero un estudio y luego desarrollando un programa de construcción, instalando estaciones piloto en varias ciudades clave y ampliando la red de vigilancia a largo plazo basándose en las lecciones aprendidas. Las estaciones de vigilancia incluirían ciudades clave y estaciones de fondo. Se prevé que las ciudades piloto se seleccionarán en 2020, y se planifica hacer mediciones de rutina en los dos o tres años siguientes. La planificación y construcción de las estaciones de fondo comenzaría en 2021. El Gobierno pondrá los datos de vigilancia recopilados a disposición de la comunidad de investigación científica.

27. La Secretaría considera que el plan del Gobierno de China de incorporar las SAO, así como los HFC, en su red de vigilancia atmosférica es encomiable, y constituye también un medio eficaz para supervisar y garantizar la sostenibilidad de la eliminación de sustancias controladas lograda hasta ahora. Considerando la complejidad de la iniciativa, la Secretaría recomienda que el Gobierno de China adopte un proceso por etapas y dedique el tiempo suficiente a establecer la red. La Secretaría también sugiere que el Gobierno mantenga consultas con la comunidad científica dedicada a la medición de los halocarbonos al establecer la red y determinar los protocolos y procedimientos adecuados[11].

Establecimiento de laboratorios de prueba[12]

28. Solo unas pocas instituciones cualificadas de China pueden proporcionar informes de prueba certificados de las muestras, algo esencial para hacer cumplir la ley a las empresas que infringen. Por consiguiente, el MEE publicó en 2019 un aviso sobre la construcción de un laboratorio de vigilancia para las SAO en productos industriales que, entre otras cosas, incluye la construcción de seis laboratorios de pruebas para SAO y el establecimiento de las normas y especificaciones correspondientes. La normas y

[10] Se trata en la sección 4.2.5 del informe presentado por el Gobierno de China.
[11] Se proporciona más información sobre la vigilancia atmosférica en el documento UNEP/OzL.Pro/ExCom/83/38.
[12] Se trata en la sección 4.2.5 del informe presentado por el Gobierno de China.

especificaciones para las pruebas en laboratorio de productos industriales con SAO se formularán y certificarán a más tardar a finales de 2019.

29. La aplicación efectiva de la ley requiere que puedan juzgarse los casos de infracciones. El establecimiento de los seis laboratorios de prueba será un paso importante para fortalecer la capacidad de aplicación de la ley del Gobierno. La Secretaría observa que, actualmente, esos laboratorios se centrarían en las pruebas de espumas y polioles premezclados. En el futuro, el Gobierno de China podría considerar la posibilidad de ampliar la capacidad para realizar pruebas de otros productos o equipos, según sea necesario.

Fortalecimiento de las inspecciones y la observancia

30. Las oficinas de ecología y medio ambiente (EEB, por sus siglas en inglés) locales[13] han desempeñado y continuarán desempeñando un papel clave en la supervisión y la observancia de la eliminación de SAO. Las EEB son responsables, entre otras cosas, de la supervisión a largo plazo del cumplimiento por parte de las empresas después de la terminación de los proyectos. La Secretaría observa que esto puede presentar dificultades para las EEB por varios motivos, entre los que se incluyen los siguientes: provincias que tienen una gran cantidad de empresas pequeñas y medianas (EPM), capacidad y recursos limitados para la supervisión y las inspecciones, equipos limitados para probar productos y la presencia de sustancias controladas, y donde una industria puede ocasionar un gran impacto en la economía local. Al respecto, el MEE tal vez pueda considerar la posibilidad de complementar sus esfuerzos haciendo inspecciones independientes periódicas de un número reducido de empresas y haciendo pruebas de muestras de un número más reducido de productos:

a) Para las inspecciones, se podrían seleccionar empresas entre las siguientes: una lista de empresas que se han registrado en una EEB para consumir SAO o que habían recibido un cupo de SAO pero ya no están registradas o no solicitan un cupo; empresas que han comprado determinadas materias primas (por ejemplo, diisocianato de metilendifenilo [MDI] utilizado en la producción de espumas, CTC, fluoruro de hidrógeno anhidro [AHF]); una lista de clientes proporcionada por distribuidores y proveedores de sistemas; e información obtenida de mecanismos de vigilancia del mercado y otras fuentes;

b) En cuanto a las pruebas de productos, estas podrían realizarse para productos fabricados con SAO y que se usan ampliamente en el país (por ejemplo, espumas pulverizadas aplicadas a un edificio construido recientemente; la espuma y el refrigerante de un artefacto fabricado recientemente; un contendedor de gas refrigerante).

Gestión de las fuentes[14]

31. El Gobierno de China prevé fortalecer la gestión de las fuentes de SAO, lo que impedirá el comportamiento ilícito en relación con las SAO y fortalecerá el marco de supervisión, presentación de informes, verificación y observancia.

32. La Secretaría considera que estos esfuerzos previstos son encomiables. A fin de fortalecer aún más el marco de supervisión, la Secretaría sugirió que el Gobierno de China considere la posibilidad de supervisar las ventas y el uso de AHF (que se requiere para la producción de todas las sustancias controladas; no obstante, también tiene un amplio abanico de usos además de esa producción, tales como la producción farmacéutica, la fabricación de semiconductores y otros) y el MDI (que se usa únicamente en la fabricación de espumas). El Gobierno de China indicó que, dado que tanto el AHF como el MDI son

[13] Las funciones y responsabilidades de las EEB se indican en varias secciones del informe presentado por el Gobierno de China.

[14] Se trata en la sección 4 del informe presentado por el Gobierno de China.

productos lícitos, la supervisión adicional de sus ventas y uso no cumpliría la legislación administrativa de China y, por lo tanto, no se podría llevar a la práctica.

Medidas de observancia de la ley[15]

33. Desde agosto de 2018, el Gobierno de China ha puesto en marcha inspecciones de observancia de la ley especializadas en SAO, tales como el rastreo de la producción ilícita; además, puso en práctica varias medidas especiales de observancia de la ley , tales como la escultura "Sky-patching" y acciones como "Goddess of the Earth" (Diosa de la Tierra), "Shield of the Nation" (Escudo de la Nación) y "Green Fence Action" (Acción Cerco Verde).

34. La Secretaría observó con reconocimiento los esfuerzos del Gobierno de China por reprimir el comportamiento ilícito relacionado con las SAO y considera que la presentación de información al respecto demuestra el compromiso de China con el Protocolo de Montreal. La Secretaría observa que, en el futuro, esas medidas de observancia de la ley e inspecciones especiales podrían pasar a ser parte de la observancia y las inspecciones ordinarias, según sea necesario.

Supervisión del CTC[16]

35. El Gobierno de China prevé fortalecer la supervisión del CTC y la presentación de informes sobre la sustancia, entre otras cosas, estableciendo un mecanismo de supervisión en tiempo real de todo el proceso en todas las empresas de clorometano (CM), que incluiría, por ejemplo, la instalación de medidores de CTC como subproducto y la medición del CTC en la producción, el almacenamiento, la conversión, las ventas y los líquidos residuales.

36. La Secretaría considera que las medidas propuestas para supervisar las instalaciones de producción de CM así como las ventas y el uso posteriores de CTC son elementos esenciales para fortalecer la supervisión del CTC y la presentación de informes sobre la sustancia. El valor de este fortalecimiento es evidente, dado que algunas de las instalaciones de producción ilícita descubiertas recientemente por el Gobierno pudieron obtener CTC y usarlo como materia prima para producir CFC-11.

37. La Secretaría observa que el mecanismo de supervisión no incluye las plantas de percloroetileno (PCE). Varias fuentes[17] indican que, según el proceso de producción, el ajuste de las condiciones de reacción podría permitir la producción de PCE al 100 por ciento o de CTC al 100 por ciento o una mezcla de ambos productos. A la fecha de finalización del presente documento, no resultaba claro si las plantas de PCE de China aplicaban un proceso de producción diferente que impediría la producción de CTC o la generación de este como subproducto. Resultaría útil contar con información adicional para determinar si la supervisión de las plantas de PCE por el MEE sería beneficiosa para garantizar que la supervisión del CTC sea exhaustiva. El informe sobre la producción de CTC y las aplicaciones como materia prima en China, que se presentará[18] de conformidad con la decisión 75/18 b) iii), puede resultar útil al respecto.

[15] Se trata en la sección 3.4.1 del informe presentado por el Gobierno de China.
[16] Se trata en la sección 4.2.1 del informe presentado por el Gobierno de China.
[17] Por ejemplo: documento UNEP/OzL.Pro/ExCom/58/50; *SPARC Report on the Mystery of Carbon Tetrachloride, SPARC Report No. 7, WCRP-13/2016* Q. Liang, P. A. Newman y S. Reimann (Eds.) (Informe del proyecto SPARC sobre el misterio del tetracloruro de carbono), disponible en https://www.wcrp-climate.org/WCRP-publications/2016/SPARC_Report7_2016.pdf; USEPA 2017, "Preliminary Information on Manufacturing, Processing, Distribution, Use, and Disposal: Tetrachloroethylene (perchloroethylene)" (Información preliminar sobre fabricación, procesamiento, distribución, uso y destrucción: tetracloroetileno [percloroetileno]), disponible en https://www.epa.gov/sites/production/files/2017-02/documents/perchloroethylene.pdf; Sherry *et al.*, 2018, "Current sources of carbon tetrachloride (CCl4) in our atmosphere" (Fuentes actuales de tetracloruro de carbono (CC14) en nuestra atmósfera), *Environ. Res. Lett.* 13 024004.
[18] Este informe se trata más detalladamente en la Parte III del presente documento.

38. Otras actividades que propone el Gobierno, tales como investigaciones de los usos de CTC para producción y como materia prima, supervisión del mercado y recopilación de información sobre ventas de SAO y capacitación y creación de capacidad sobre supervisión de SAO y observancia para las EEB locales, también ayudarán a aportar información para el establecimiento de un mecanismo de supervisión en tiempo real de todo el proceso del CTC. El Comité Ejecutivo tal vez desee tomar nota de que el Gobierno de China tiene intención de utilizar aproximadamente 2,25 millones de $EUA de los saldos restantes del proyecto de agentes de procesos II para ejecutar varias de estas actividades, como se propone en la sección sobre "agentes de procesos II" en la Parte III del presente documento. Esa sección proporciona información técnica de fondo sobre el CTC en China. Por consiguiente, el Comité Ejecutivo tal vez desee considerar la posibilidad de tratar los asuntos relacionados con el CTC que se exponen en la Parte III del presente documento.

Facilitación de la notificación de faltas de cumplimiento de los reglamentos

39. Como señalaron varios participantes en el taller internacional sobre creación de capacidad para la aplicación del Protocolo de Montreal[19], las aportaciones de la industria regulada frecuentemente resultan útiles en relación con las medidas de observancia de la ley. Por cierto, no resulta inusual que la industria tenga mejores conocimientos acerca del mercado y los actores del mercado que las autoridades gubernamentales que regulan esa industria. Las asociaciones industriales de China, que participan asimismo en los planes sectoriales, también desempeñan un papel importante en la supervisión y la observancia, proporcionando información sobre los actores y las empresas[20]. Las EEB también pueden invitar a las asociaciones industriales y a expertos individuales a que participen en las medidas de observancia de la ley a fin de proporcionar apoyo técnico sobre el terreno. Las asociaciones comparten información con las empresas, se ocupan de la publicidad y la capacitación, ponen en marcha iniciativas para alentar el cumplimiento por parte de la industria y pueden facilitar a los departamentos gubernamentales pistas sobre los comportamientos ilícitos.

40. Además, de acuerdo con la ley de protección ambiental, China estableció una línea directa de protección ambiental (12369) que está abierta a denuncias públicas sobre posibles infracciones ambientales. Las denuncias se presentan directamente a las EEB de nivel municipal y ponen en marcha las medidas subsiguientes, tales como visitas sobre el terreno y acopio de muestras. La información personal está protegida y es confidencial. El Gobierno de China trata la información de los interesados directos como una de las muchas fuentes de información para la supervisión y la observancia.

41. El artículo 9 del Reglamento de Administración de las Sustancias que Agotan el Ozono (Decreto núm. 573)[21] otorga a todas las dependencias e individuos el derecho a denunciar infracciones de los reglamentos, y establece que el departamento que recibe una denuncia de una infracción deberá recompensar a la persona que hace la denuncia si la infracción se verifica por medio de la investigación. En relación con el primer aspecto, aunque el artículo 9 especifica que el departamento que recibe la denuncia mantendrá la confidencialidad del denunciante, no se menciona explícitamente la protección contra represalias. El Gobierno de China podría considerar la posibilidad de incluir esa protección como un mecanismo para alentar la presentación de denuncias. En relación con el segundo aspecto, no resulta claro si se han ofrecido recompensas a las personas que presentaron información. El Gobierno de China podría considerar la posibilidad dar publicidad a esas recompensas como un mecanismo para alentar la presentación de denuncias.

[19] Beijing, 18 y 19 de marzo de 2019.

[20] Por ejemplo, como se expone en la Parte II del presente documento, la Asociación de la Industria de Procesamiento de Plásticos de China (CPPIA, por sus siglas en inglés) ha elaborado un análisis de balance de la masa anual para el sector de espumas de PU que compara las ventas totales de MDI con el uso notificado de agentes espumantes para detectar posibles brechas y seguir investigando. Véanse también las secciones 2.21 y 3.4.2 del informe presentado por el Gobierno de China.

[21] Véase el Anexo I del informe presentado por el Gobierno de China.

Imposición de sanciones a los usuarios finales por faltas de cumplimiento de los reglamentos[22]

42. Pueden imponerse sanciones a las empresas que contravienen el Reglamento de Administración de las SAO. Como se expone más detalladamente en la Parte II del presente documento, la Secretaría sugirió que el Gobierno de China considerase la posibilidad de extender esas sanciones a los usuarios. Por ejemplo, si una empresa de espumas pulverizadas usara una sustancia prohibida en un gran proyecto de construcción, la sanción se podría aplicar a la empresa que lleva a cabo el proyecto de construcción; si una EPM instalase una pieza de equipos de refrigeración y aire acondicionado que contiene una SAO eliminada en una gran empresa (por ejemplo, una cadena de supermercados), esa gran empresa también podría estar sujeta a una sanción. Esas sanciones podrían incentivar a las grandes empresas a garantizar que todos los elementos de su cadena de suministro observen de manera estricta todos los reglamentos gubernamentales.

Aclaraciones técnicas

43. A continuación se presentan aclaraciones técnicas relacionadas con la supervisión y la presentación de informes en el marco del PGEH y el PGEPH para China.

Supervisión y presentación de informes

44. Todas las empresas que registran un consumo de HCFC superior a 100 toneladas métricas (tm) deben tener un cupo, mientras que las empresas con un consumo anual de HCFC inferior a ese nivel no necesitan un cupo, pero deben registrarse en la EEB local provincial. A medida que avance la eliminación de HCFC en el marco del PGEH, es probable que el consumo de todos los sectores esté crecientemente dominado por empresas con un consumo inferior a 100 tm. Durante las discusiones que mantuvo con el PNUD, la Secretaría sugirió que el Gobierno considerase la posibilidad de reducir el umbral de 100 tm a fin de garantizar que la mayor parte de las empresas de un sector requieran un cupo, garantizando de ese modo la eficacia del sistema de cupos para controlar el consumo en el nivel del sector de conformidad con el Acuerdo. El PNUD indicó que el sistema existente había resultado eficaz durante la ejecución del PGEH y que, por lo tanto, el Gobierno lo mantendría en las etapas subsiguientes del PGEH. Considerando las dificultades que plantea la gestión del consumo en los sectores con una gran cantidad de EPM, China también depende del sistema de cupos para el sector de producción, que limita la cantidad de HCFC que se puede usar a nivel nacional.

45. Los acuerdos de subvención secundarios (SGA, por sus siglas en inglés) especifican que, si la empresa beneficiaria no cumple con el cese del uso de HCFC con arreglo a las disposiciones del SGA, o continúa usando HCFC y otras SAO eliminadas, se la considerará en incumplimiento. Hasta la fecha, no se ha determinado que ninguno de los beneficiarios haya incumplido su SGA reanudando el consumo de HCFC u otras sustancias controladas. Una vez que se ha completado la conversión en una empresa que recibió asistencia y se ha logrado la aceptación nacional, la responsabilidad de supervisar a la empresa recae en la EEB local, aunque durante la ejecución del PGEH y durante el plazo del acuerdo de subvención del PGEH, el Centro de Cooperación Ambiental Internacional (IECO, por sus siglas en inglés) y los organismos bilaterales y de ejecución pueden seguir haciendo visitas sobre el terreno a las empresas. Tras la aceptación nacional, las EEB locales incorporan las empresas en su programa de supervisión e inspección ordinario, así como coordinan medidas especiales para las SAO que ya se han eliminado o se siguen controlando. Los programas de supervisión e inspección pueden variar según las diferentes circunstancias de cada provincia. En términos generales, cada empresa se inspecciona por lo menos una vez por año.

46. Las empresas que consumían más de 100 tm por año (y, por lo tanto, tuvieron un cupo y se habían registrado en el IECO) y que realizaron la conversión sin financiación del Fondo Multilateral no reciben

[22] Se trata en la sección 3.3.2.2 y en el Anexo I del informe presentado por el Gobierno de China.

certificados de aceptación nacional después de la conversión[23]. Su conversión se informaría y registraría en las EEB locales de acuerdo con los requisitos de las evaluaciones de impacto ambiental (EIA) y las EEB locales son responsables de la supervisión ordinaria y las inspecciones de esas empresas después de las conversiones.

47. Todas las empresas beneficiarias tienen la obligación de recibir inspecciones y verificaciones realizadas por los organismos de ejecución o las instituciones que estos designen. Las verificaciones de los organismos de ejecución se realizan usualmente una vez por año en empresas beneficiarias aleatorias, de acuerdo con los requisitos establecidos en el Acuerdo entre el Gobierno de China y el Comité Ejecutivo. En la etapa II del PGEH, esas verificaciones pueden realizarse en una muestra aleatoria de por lo menos el 5 por ciento de las líneas de fabricación para las que se completó la conversión en el año por verificar, en la inteligencia de que el consumo total acumulativo de HCFC de la muestra aleatoria de las líneas de fabricación represente por lo menos el 10 por ciento del consumo del sector eliminado ese año. Las empresas que no recibieron financiación del Fondo Multilateral para la conversión no se incluyen en esas verificaciones. Para esas empresas, el MEE y las EEB locales aplican un sistema de gestión de cupos y registro según el Reglamento sobre las SAO y la Circular de 2013.

48. Las cuestiones relacionadas con el sector de espumas de PU, tales como el tratamiento de las sustancias contenidas en polioles premezclados, la clasificación de los proveedores de sistemas como empresas que requieren un cupo y otros asuntos, se tratan en la Parte II del presente documento. El sistema de aprobación en línea de la gestión de importación y exportación de SAO de China no incluye las sustancias contenidas en polioles premezclados, y el Gobierno tampoco notifica a los países qué sustancias controladas contenidas en polioles premezclados se exportan, ya sea por medio de un mecanismo informal y voluntario de consentimiento fundamentado previo (iPIC) u otros medios, ni cuando esas importaciones están destinadas a una zona de libre comercio. La cuestión de las exportaciones de sustancias controladas contenidas en polioles premezclados, incluso a zonas de libre comercio, también se trata en el documento UNEP/OzL.Pro/ExCom/83/38.

Supervisión y presentación de informes en el marco del PGEPH

49. El Gobierno de China aclaró que, a fin de alcanzar los objetivos de cumplimiento para el sector de producción de HCFC, entre otras cosas, había establecido un sistema de gestión de cupos de producción comercializable que abarcaba únicamente los productores que ya estaban establecidos a la fecha de la aprobación de la etapa I del PGEPH. Las instalaciones de producción establecidas después de esa fecha no están asignadas y no pueden obtener un cupo, y únicamente se les permite producir HCFC para usos como materia prima, no así para usos controlados. No se requiere un cupo cuando la producción de los HCFC está destinada a usos como materia prima.

50. Todos los productores, independientemente de si producen solo para usos como materia prima, usos controlados o una combinación de ambos, deben notificar los datos que se especifican en la sección 3.2.2.3; es decir, producción, compra, información de ventas detallada para diferentes usos (tales como monto de las ventas, comprador y usuarios), uso interno y existencias, así como las materias primas. Los usuarios de sustancias como materia prima deben registrarse en el MEE, independientemente de su nivel de consumo, y los usuarios registrados luego deben notificar las sustancias controladas utilizadas como materia prima en su proceso al MEE, que coteja periódicamente el uso como materia prima notificado por los usuarios con las ventas para usos como materia prima que notificaron los productores.

[23] Por ejemplo, en la etapa II del plan para el sector de acondicionadores de aire de habitación, más de la mitad de la eliminación se logrará por medio de la conversión de empresas que no recibieron financiación del Fondo Multilateral para esas conversiones.

Informes sobre producción ilícita de sustancias controladas

51. El informe presentado por el Gobierno de China incluye información sobre 24 casos de producción ilícita, 44 casos de uso ilícito y 5 casos de ventas ilícitas de SAO que fueron investigados y por los que se impuso una sanción, desde 2010 hasta el primer semestre de 2018. En lo que respecta a la producción ilícita, 14 casos se relacionaban con el CFC-11. Se destruyeron alrededor de 84 toneladas de CFC-11 ilícito, se desmantelaron instalaciones de producción y se impusieron multas a cuatro empresas por el uso ilícito de CFC-11.

52. Además de la información sobre los casos de producción ilícita incluidos en el informe, se proporcionó la información siguiente:

a) De los 14 casos relacionados con el CFC-11, seis se detectaron en 2012-2013, seis en 2014, uno en 2015 y uno en 2017. En el caso detectado en 2014[24], parecen haberse utilizado CTC y AHF como materias primas, ya que se descubrieron tanto CFC-11 como CFC-12, así como CTC (13,9 tm) en el sitio. Se notificaron 1,2 tm de CFC-11 en total; no hay información disponible sobre la cantidad de CFC-12 o su destino. Considerando la falta de registro en las instalaciones, y una falta de experiencia técnica y equipos por parte de los organismos de observancia pertinentes, no hay información disponible, como capacidad, cantidad de CFC-11 producida y materias primas utilizadas, sobre los otros casos de producción ilícita detectados;

b) En 2015, se detectó un caso de producción ilícita de CFC-12. Dado que el CFC-11 y el CFC-12 usualmente se coproducen, no resulta claro si el proceso de producción era, en este caso, diferente de aquel aplicado en los 14 casos relacionados con el CFC-11. No hubo información disponible sobre la capacidad de las instalaciones, la cantidad de CFC-12 producida y el uso previsto de CFC-12;

c) En 2014, se detectó un caso de producción ilícita de metilbromuro;

d) Como se describe más detalladamente a continuación, se detectaron tres casos de producción ilícita de HCFC en 2013, 2014 y 2017; y

e) No se sabe qué producción ilícita de SAO se producía o se tenía intención de producir en los cinco casos restantes, debido a la falta de documentación en las instalaciones ilícitas, y la experiencia técnica limitada del personal de aplicación de la ley que llevó a cabo las inspecciones, así como de los equipos utilizados para identificar las SAO. El MEE tiene previsto organizar sesiones de capacitación para los organismos a cargo de las investigaciones, con la finalidad de mejorar su capacidad técnica para reconocer y documentar la producción ilícita de SAO.

53. Desde agosto de 2018, se han detectado otras dos instalaciones de producción de CFC-11 ilícitas en Liaoning y la provincia de Henan[25]. En esos dos casos, se decomisaron casi 30 tm de CFC-11 y 177,6 tm de materias primas. El Gobierno confirmó que esas instalaciones usaban el proceso de fluoración de fase líquida, con CTC y AHF como materias primas y cloruro de antimonio como catalizador. A la fecha de finalización del presente documento, no resultaba claro cómo pudieron comprar CTC estas empresas.

54. La Secretaría entiende que resulta técnicamente difícil producir solo CFC-11 (o CFC-12) cuando se usa el proceso de fluoración de fase líquida; no resulta claro cómo esas instalaciones de producción pequeñas e ilícitas podrían tener esa capacidad, lo que incluye el cuidadoso control requerido de las

[24] Caso 3, como se describe en la página 31 del informe del Gobierno de China que se adjunta.
[25] Se describe en las páginas 31 y 32 del informe presentado por el Gobierno de China.

condiciones de la reacción. Las observaciones científicas recientes detectaron un aumento en las emisiones de CFC-11, pero no de CFC-12. La Secretaría también observa que las mayores emisiones de CFC-11 procedentes de Asia Oriental informadas en la literatura científica ascienden a 13 000 tm/año (±5 000 tm/año).

55. Se proporcionó la siguiente información acerca de los tres casos de producción ilícita de HCFC:

a) En 2013, una empresa transformó sus instalaciones de HFC-32 para producir HCFC-22 ilícitamente. Tenía previsto producir HCFC-22 como materia prima para sus instalaciones derivadas de tetracloroetileno (TFE). La empresa fue sancionada por la EEB local y se cerró la línea de producción;

b) En 2014, una empresa estableció una línea de producción de HCFC-22 para utilizarlo como materia prima en sus instalaciones derivadas de TFE y HFC-125 sin aprobación. La empresa fue sancionada por la EEB local y se habían cerrado todas las instalaciones; y

c) En 2017, una planta ilícita estableció una pequeña instalación de HCFC-141b que produjo aproximadamente 27 tm de HCFC-141b. La empresa fue sancionada y las instalaciones de HCFC-141b se desmantelaron y destruyeron de acuerdo con lo requerido por la EEB local.

56. Sobre la base de la escasa información disponible, aparentemente los dos casos de producción de HCFC-22 son diferentes del caso relacionado con el HCFC-141b. En este último caso, parece tratarse de una instalación pequeña e independiente, mientras que los dos primeros parecen haberse producido en empresas que tienen instalaciones integradas que usan un HCFC como materia prima en sus procesos de producción subsiguientes. Esas instalaciones pueden tener una gran capacidad de producción. Un examen preliminar de la información proporcionada por el Gobierno indica que el proceso utilizado para supervisar el uso como materia prima en las instalaciones, incluidas las instalaciones integradas, es similar a la metodología utilizada por el Banco Mundial durante el proceso de verificación de la producción de HCFC, que incluye, entre otras cosas, cuestionarios previos a la visita sobre el terreno, razón entre consumo de materias primas y producción de productos, origen del HCFC utilizado como materia prima, nivel de existencias en el sitio, datos de ventas de productos y cualquier otra información sobre ampliación de la producción. El IECO coteja la materia prima utilizada por los usuarios de materias primas con los datos de ventas notificados por los productores de HCFC. Una entidad técnica independiente contratada por la DGP mediante la asistencia técnica del PGEPH realiza esa supervisión una vez cada dos años. Además, la Secretaria entiende que las instalaciones integradas que producen HCFC internamente y usan todos los HCFC producidos como materia prima deberían estar registradas como productores de HCFC y no como usuarios de materias primas; no obstante, no resulta claro si todas esas instalaciones que producen HCFC se han registrado en el MEE. Dado que la información sobre el proceso que utiliza el Gobierno para supervisar a los usuarios de materias primas es limitada, la Secretaría ha incluido una recomendación, dirigida al Subgrupo sobre el sector de producción, que indica que se pida más información al respecto.

57. En lo que atañe a la instalación de producción de HCFC-32 que se convirtió ilícitamente a la producción de HCFC-22, no resulta claro si se modificaron los equipos existentes o se compraron equipos nuevos, o si la instalación cambió a la producción de HCFC-22 utilizando los equipos existentes (es decir, solo cambiaron las materias primas[26] y las condiciones de operación). La Secretaría no tiene en claro la factibilidad técnica de que una línea de producción de HFC-32 se modifique o cambie para la producción de HCFC-22, si se podrían modificar o cambiar otros procesos de producción fluoroquímica para producir HCFC-22. Al respecto, el Gobierno de China tal vez desee realizar un examen de la factibilidad técnica y

[26] En la producción de HFC-32, se utilizan AHF y diclorometano (es decir, cloruro de metilo) como materias primas, mientras que en la producción de HCFC-22 se utilizan AHF y triclorometano (es decir, cloroformo).

económica de que se cambien los procesos de producción fluoroquímica para producir HCFC-22 y compartir los resultados de ese examen con el Comité Ejecutivo.

58. Los casos de producción ilícita identificados y llevados a juicio en China desde 2010 no habían sido notificados al Comité Ejecutivo anteriormente. El Comité tal vez desee tomar nota de que, en el documento UNEP/OzL.Pro/ExCom/83/38, la Secretaría presenta para su consideración la petición de que todos los países que operan al amparo del artículo 5 que hayan recibido financiación para la eliminación de la producción de SAO para usos controlados y para fortalecimiento institucional, entre otras cosas, informen a la Secretaría todas aquellas instancias en que el país hubiera detectado casos de producción ilícita y de que la Secretaría notifique esos casos al Comité Ejecutivo a fin de que pueda decidir qué medidas o actuaciones resultarían adecuadas.

59. En el caso de que hubiera más información sobre los casos de producción ilícita de SAO en China disponible antes de la 83ª reunión, la Secretaría informará al Comité Ejecutivo según proceda.

Conclusiones

60. La Secretaría aprecia la información detallada proporcionada por el Gobierno de China acerca de sus sistemas de supervisión, presentación de informes, verificación y observancia, y las medidas que ha tomado para fortalecerlos. Si bien se tomarán varias medidas para fortalecer los sistemas de China que serán importantes en su conjunto, tres se destacan como especialmente significativas:

a) La red de vigilancia atmosférica de las SAO, una vez que se establezca, servirá como un mecanismo independiente para que el Gobierno verifique que continúa cumpliendo los objetivos especificados en sus Acuerdos con el Comité Ejecutivo. El establecimiento y mantenimiento de esa red requerirán recursos sustanciales, y reflejan el compromiso del Gobierno de China respecto de la aplicación del Protocolo de Montreal. El compromiso del Gobierno de poner los datos recopilados de su red a disposición de la comunidad científica logrará adelantos en los conocimientos científicos acerca de los halocarbonos en la atmósfera y promoverá los objetivos del Convenio de Viena;

b) El establecimiento de seis laboratorios de prueba antes de finales de 2019 es un paso clave para fortalecer la capacidad del Gobierno de China en relación con la observancia, ya que permitirá abordar en forma directa la limitada capacidad actual para realizar pruebas;

c) China ha decidido centrar gran atención y dedicar recursos para mejorar la supervisión del CTC. El mecanismo de supervisión en tiempo real de todo el proceso en las empresas de CM incluye medidas de gran alance y garantizaría que se realice una supervisión completa y precisa del CTC donde se apliquen esas medidas.

61. Aunque China cuenta con un sólido sistema para la supervisión, la presentación de informes, la verificación y la observancia de la eliminación de SAO, así como tiene previsto tomar otras medidas para fortalecer ese sistema, la Secretaría observa lo siguiente:

a) Las EEB locales desempeñan un papel fundamental en la supervisión y observancia de la eliminación de SAO. El MEE tal vez pueda considerar la posibilidad de complementar los esfuerzos de las EEB haciendo inspecciones independientes periódicas de un número reducido de empresas y haciendo pruebas de muestras de un número más reducido de productos. Esas inspecciones y pruebas podrían ser parte de futuras medidas de observancia de la ley e inspecciones especiales futuras, y se podría integrar en la observancia y las inspecciones ordinarias, según sea necesario;

b) Además de la mejora de la supervisión del CTC en las instalaciones de CM, se podría considerar la supervisión de las plantas de PCE;

c) La divulgación expeditiva de la producción ilícita de sustancias controladas, que indica que existe demanda para esas sustancias, ayudaría a los miembros del Comité Ejecutivo a comprender de qué manera China está abordando las posibles deficiencias de sus mecanismos de supervisión y observancia;

d) Considerando que se dispone de información limitada sobre algunos de los casos de producción ilícita, sería necesario realizar otras investigaciones acerca de la posible producción no declarada de SAO en instalaciones más grandes e integradas. Además, resultaría útil comprender mejor de qué manera se supervisan los usos de SAO como materia prima; y

e) Los casos de producción ilícita también son posibles oportunidades para aprender acerca de cómo pueden esas instalaciones comprar, por ejemplo, CTC, cuáles son los usos previstos de las SAO y quiénes son los probables clientes. Por lo tanto, se recomienda que se capacite al personal encargado de la aplicación de la ley para identificar la producción de SAO y preservar la información técnica clave y los datos de los casos de falta de cumplimiento de los reglamentos aplicables.

Recomendación de la Secretaría

62. El Comité Ejecutivo tal vez desee:

a) Tomar nota del examen de los sistemas de supervisión, presentación de informes, verificación y observancia actuales que ha puesto en práctica el Gobierno de China con arreglo a sus Acuerdos con el Comité Ejecutivo sobre el plan de gestión de eliminación de HCFC y el plan de gestión de la producción de HCFC del país, y el informe sobre la marcha de las actividades relativo a las medidas adoptadas con miras a fortalecer la legislación sobre SAO y la observancia de esta en China, que se presentaron de conformidad con las decisiones 82/65 y 82/71 a); y

b) Tomar nota con reconocimiento de la intención del Gobierno de China de incluir la supervisión de las sustancias que agotan la capa de ozono (SAO) y los HFC en la vigilancia atmosférica y del compromiso de Gobierno de China de compartir los datos recopilados en esa vigilancia con la comunidad científica, [y pedir al Gobierno de China que presente información actualizada acerca de los progresos logrados en el establecimiento de la red de vigilancia a la primera reunión de 2021].

PARTE II: ESTUDIO TEÓRICO SOBRE EL SISTEMA ACTUAL DE SUPERVISIÓN DEL CONSUMO DE AGENTES ESPUMANTES EN LAS EMPRESAS QUE RECIBIERON ASISTENCIA EN LA ETAPA I DEL PLAN DE GESTIÓN DE ELIMINACIÓN DE HCFC Y METODOLOGÍA DE VERIFICACIÓN (DECISIÓN 82/67 C)) (BANCO MUNDIAL)

Antecedentes

63. En nombre del Gobierno de China, el Banco Mundial ha presentado a la 83ª reunión un estudio teórico sobre el sistema actual de supervisión del consumo de agentes espumantes en las empresas que recibieron asistencia en la etapa I del plan de gestión de eliminación de HCFC y una metodología de verificación que incluye muestreos aleatorios destinados a verificar si se habían consumido o estaban consumiendo en esas empresas las SAO que ya se habían eliminado (decisión 82/67 c)).

64. El estudio teórico, que se adjunta en forma completa al presente documento, tiene cinco capítulos:

Capítulo I	Introducción
Capítulo II	Eliminación de SAO en el sector de espumas de PU de China
Capítulo III	Sistema de supervisión del consumo de HCFC establecido para las espumas de PU
Capítulo IV	Lecciones aprendidas
Capítulo V	Metodología propuesta para verificar el uso de las sustancias eliminadas.

Observaciones de la Secretaría

65. La Secretaría tomó nota con reconocimiento del informe integral presentado por el Gobierno de China por conducto del Banco Mundial, así como del exhaustivo proceso seguido por el Gobierno para describir y analizar la capacidad anterior y actual para supervisar y verificar la eliminación de SAO, detectar deficiencias y dificultades del sistema actual y proponer una metodología para verificar el uso de las sustancias eliminadas al tiempo que se abordan esas deficiencias.

66. Al examinar el estudio teórico, la Secretaría identificó varios aspectos para los que se requerían aclaraciones o información adicionales. Si bien se trataron varias aclaraciones, en el presente documento se indican solo aquellos aspectos de la discusión que aportan elementos adicionales a la información que ya figura en el estudio teórico revisado que se presentó después discutir el tema, que está disponible en forma completa en el Anexo II del presente documento.

67. La información adicional que se expone a continuación se presenta en el mismo orden que los capítulos del estudio teórico.

<u>Eliminación de SAO en el sector de espumas de PU de China</u>

Información adicional sobre la función de los proveedores de sistemas en la supervisión, la presentación de informes y la verificación

68. Considerando la función clave que desempeñan los proveedores de sistemas en el sector de espumas de PU, ya que formulan polioles que contienen agentes espumantes (controlados y alternativos) para las empresas transformadoras:

a) La Secretaría pidió más información acerca de sus funciones y responsabilidades en la eliminación de los CFC y el PGEH y acerca de cómo se realiza la supervisión de las SAO de los proveedores de sistemas que recibieron asistencia y de aquellos que no la recibieron. El Gobierno de China explicó que durante el período de eliminación de los CFC había solo alrededor de diez proveedores de sistemas que suministraban polioles premezclados. El auge de las empresas proveedoras de sistemas en China comenzó solo cuando el HCFC-141b penetró el mercado después de la prohibición de los CFC. En la etapa I del PGEH se comenzó a incluir a los proveedores de sistemas en la eliminación del HCFC-141b. En los acuerdos secundarios firmados con el IECO, los proveedores de sistemas acordaron congelar su consumo de HCFC-141b según el nivel del año de referencia, lo que controlaría el consumo de HCFC-141b y crearía un incentivo para la penetración de tecnologías alternativas. Durante las encuestas realizadas en el sector, como la encuesta para la preparación de los planes sectoriales y la encuesta de mercado de las EPM, los proveedores de sistemas desempeñaron un papel clave, ya que proporcionaron información sobre los clientes subsiguientes, alentaron a las empresas admisibles a solicitar financiación y prestaron apoyo técnico;

b) La Secretaría sugirió que la metodología propuesta para verificar el uso de sustancias eliminadas debería incluir las funciones específicas que los proveedores de sistemas podrían desempañar para ayudar a supervisar y verificar la eliminación de SAO. Por ejemplo, los proveedores de sistemas podrían ayudar a acelerar y aumentar el registro de empresas, informar infracciones a los acuerdos, aumentar la conciencia entre las EPM respecto a las medidas de control de la eliminación y la disponibilidad de tecnologías alternativas y facilitar su introducción. El Gobierno de China indicó que durante la etapa II del PGEH, se proporcionaría más financiación a los proveedores de sistemas y se les asignarían más obligaciones respecto a la eliminación del HCFC-141b y la prestación de asistencia técnica a las empresas transformadoras. Las medidas incluyen, entre otras, ampliación de la capacidad de producción de polioles premezclados alternativos, reducción gradual del HCFC-141b respecto del año de referencia y asistencia técnica a las EPM clientes. Se alentará a las EEB a que se comuniquen con los proveedores de sistemas y aumenten su capacidad para comunicarse con las EPM de sus regiones; y

c) La Secretaría sugirió que se clasificara a los proveedores de sistemas como empresas de espumas de PU, y no como distribuidores, a fin de que pudieran estar registradas en el MEE si consumen más de 100 tm de HCFC en lugar de si consumen más de 1 000 tm. El Gobierno de China explicó que esto no marcaría una diferencia, dado que, según los reglamentos, todos los proveedores de sistemas deben registrarse ya sea en el MEE o en su EEB provincial, y todos ellos estaban sujetos a supervisión y estaban obligados a recibir inspecciones del MEE y las EEB locales.

69. La Secretaría observa con reconocimiento que, en la metodología propuesta para verificar el uso de sustancias eliminadas, el estudio teórico incluye a los proveedores de sistemas como una de las principales fuentes de información para las empresas transformadoras clientes, y que esta información se utilizará para actualizar el registro de empresas de espumas de PU que mantienen las EEB. La Secretaría considera, no obstante, que clasificar a los proveedores de sistemas como empresas de espumas de PU en lugar de distribuidores permitirá al MEE comprender mejor el sector y los flujos de agentes espumantes y polioles premezclados que contienen sustancias controladas.

Información adicional sobre el alcance de la supervisión, la verificación y la presentación de informes a través de las EEB

70. Basándose en el estudio teórico y en informes anteriores sobre la marcha de las actividades relativos a la etapa I del plan para el sector de espumas del PGEH, la Secretaría observó que la cooperación del IECO

con las EEB para la supervisión de la eliminación de las SAO se había centrado principalmente en 11 provincias[27]. Considerando la probabilidad de que hubiera EPM de espumas de poliuretano en otras provincias, la Secretaría preguntó acerca de otros esfuerzos desplegados para garantizar que las restantes provincias/regiones autónomas/municipalidades tuvieran la capacidad suficiente para gestionar localmente las SAO del sector de espumas de PU. Al respecto, el Gobierno de China explicó que:

a) Aun cuando hubiera empresas y proveedores de sistemas de espumas de PU distribuidos en otras regiones de China, se había dado prioridad a fortalecer la capacidad de supervisión en estas 11 provincias y ciudades clave dado que representaban más de 90 por ciento del consumo nacional de HCFC;

b) También se ha fomentado la capacidad de gestión local de las SAO en todas las provincias. Las EEB locales recopilaron datos de consumo de SAO en sus regiones, publicaron políticas e información acerca de la eliminación de las SAO en el sector de espumas, impartieron capacitación a los oficiales de proyecto pertinentes acerca de la políticas y los reglamentos sobre las SAO y organizaron verificaciones sobre el terreno e inspecciones de observancia de la ley en los sectores pertinentes. También se han organizado actividades de sensibilización del público en las regiones, tales como los talleres sobre reglamentos de gestión de SAO y tecnologías alternativas para las empresas de proveedores de sistemas de espumas de PU; y

c) Durante la campaña sobre SAO de agosto de 2018, se realizaron inspecciones en todas las provincias simultáneamente. Se comprobó que otras provincias habían establecido registros de empresas y proveedores de sistemas de espumas de PU y habían aplicado medidas de observancia de la ley que incluyeron la investigación de las empresas. La etapa II del PGEH, además, brindaría asistencia a las provincias que requieran apoyo técnico o financiero, prestando especial atención a las regiones que notificaran indicios o casos de uso ilícito de SAO eliminadas. Se organizarían talleres para los oficiales de las EEB locales en forma regular.

71. La Secretaría tomó nota con reconocimiento la información adicional sobre el aumento progresivo de la capacidad de todas las EEB, especialmente donde no se habían ejecutado proyectos del Fondo Multilateral y donde la exposición a la labor de supervisión que se estaba realizando podría haber sido menor. La Secretaría considera que las actividades de asistencia técnica incluidas en el plan para el sector de espumas de PU de la etapa II del PGEH podría ayudar a aumentar la capacidad de todas las EEB donde se fabrican espumas de PU. La Secretaría sugirió que se considerase una red interprovincial de oficiales de EEB con miras a intercambiar información y crear capacidad para la gestión de las SAO, siguiendo un modelo similar a aquel establecido mediante las redes regionales de oficiales del ozono del PNUMA. El Gobierno agradeció esta sugerencia, reconociendo que era necesario fortalecer el intercambio de información entre las regiones.

Mecanismos para facilitar la notificación de faltas de cumplimiento de los reglamentos en el sector de espumas de PU

72. Como se expone en la Parte I del presente documento, la Secretaría alienta al Gobierno de China a continuar desarrollando y promoviendo mecanismos de protección de denunciantes de irregularidades para garantizar que puedan notificarse de manera segura las faltas de cumplimento de los reglamentos sobre las SAO y a continuar aumentando la conciencia en la industria acerca de las consecuencias ambientales y la desventaja competitiva que sufren las empresas que cumplen la ley como resultado de los comportamientos ilícitos.

[27] Guang Dong, Hebei, Henan, Jiang Su, Liaoning, Qingdao, Shang Dong, Shanghai, Sichuan, Tianjin, Zhe Jiang.

Imposición de sanciones a los usuarios finales por faltas de cumplimiento de los reglamentos en el sector de espumas de PU

73. Considerando que la metodología propuesta para verificar el uso de sustancias eliminadas incluye la intensificación de las sanciones por infracciones, la Secretaría preguntó si el Gobierno de China había considerado la posibilidad de imponer sanciones a los usuarios (por ejemplo, los grandes proyectos de construcción serían responsables por los materiales utilizados, tales como el agente espumante de las espumas pulverizadas). El Gobierno indicó que resultaba difícil imponer sanciones a los usuarios finales, ya que usualmente no podían realizar pruebas de los componentes que contenían los productos. Los usuarios finales compran productos o servicios y confían en los controles de calidad suministrados por los proveedores. La legislación y las políticas actuales sobre SAO han establecido un sistema de gestión para todo el proceso de producción, uso, venta, importación y exportación de SAO.

74. La Secretaría coincide en que la mayor parte de los usuarios debe confiar en los controles de calidad suministrados por los proveedores. Con respecto a los grandes usuarios finales, tales como los grandes proyectos de construcción, la Secretaría no tiene información de otros países que operan al amparo del artículo 5 acerca de medidas específicas para aplicar prohibiciones al uso de agentes espumantes (por ejemplo, inspecciones sobre el terreno del producto final en los grandes usuarios finales). Se observa, no obstante, que la metodología propuesta incluye el muestreo de productos de espuma de los usuarios (productores de espumas) y distribuidores de SAO. La cuestión no se siguió discutiendo a fondo en el plazo disponible para la preparación del presente documento.

Leyes y reglamentos relacionados con las SAO contenidas en polioles premezclados

75. La Secretaría pidió aclaraciones acerca de cómo se consideraban las SAO contenidas en los polioles premezclados en el conjunto integral de leyes, reglamentos, normas y políticas establecido para gestionar y supervisar las SAO en China. El Gobierno explicó que, según sus normas y reglamentos, especialmente la Circular de 2013 que había publicado el MEE, las empresas que consumían HCFC contenidos en polioles premezclados se consideraban consumidores de HCFC y, por lo tanto, debían solicitar un cupo de consumo si el consumo de HCFC contenido en polioles importados era igual o superior a 100 tm por año, o registrarse en la EEB provincial si el consumo era inferior a 100 tm por año. Los proveedores de sistemas también deben registrarse en el MEE (si su consumo de HCFC es superior a 1 000 tm por año) o en la EEB provincial (si el consumo es inferior a 1 000 tm por año), según su volumen de ventas, y llevar un registro de sus ventas. Los registros podrían mostrar dónde se vendían los polioles premezclados. Sin embargo, debido a la complejidad de toda la cadena de suministro y la posibilidad de que participen diferentes niveles de distribuidores, resulta difícil distinguir con precisión entre las ventas internas y las exportaciones basándose únicamente en los registros de un proveedor de sistemas individual. En varias partes del informe se indica que los polioles premezclados se incluyen en las medidas de supervisión, especialmente en las inspecciones sobre el terreno.

76. La Secretaría observa que los reglamentos dan el mismo trato a los HCFC y los HCFC contenidos en polioles premezclados. Por lo tanto, se debería hacer un seguimiento del HCFC contenido en polioles premezclados similar al de las exportaciones de HCFC, incluidos los cupos de exportación. Por consiguiente, la Secretaría recomienda que el Gobierno de China considere la posibilidad de desarrollar un sistema para identificar, registrar, controlar y notificar más adecuadamente las exportaciones de polioles premezclados que contienen sustancias controladas, y de incluir las SAO contenidas en polioles premezclados en el mecanismo de iPIC si actualmente no están incluidas. Esto, si bien va más allá de la supervisión, la presentación de informes y la verificación de la eliminación de SAO en China, ha resultado valioso para esas tareas en otros países.

Disposiciones sobre incumplimiento de contrato en los SGA firmados por las empresas de CFC que recibieron asistencia

77. La Secretaría pidió aclaraciones acerca de si los SGA firmados por las empresas que recibieron asistencia para la eliminación de los CFC también incluían disposiciones sobre incumplimiento de contrato, y si dichas disposiciones se habían aplicado alguna vez (por ejemplo, el PGEH dispone una penalización de hasta el 10 por ciento del valor del SGA o la cancelación del SGA y la devolución de la asistencia en aquellos casos en que las empresas beneficiarias no dejen de utilizar o vuelvan a utilizar HCFC-141b). El Gobierno de China aclaró que las disposiciones sobre incumplimiento de contrato también figuraban en los SGA para el plan sectorial de eliminación de CFC y que, hasta la fecha, no se había determinado que ningún beneficiario del plan sectorial de CFC o el PGEH hubiera incumplido un SGA. Se consideraría que el beneficiario habría incumplido el contrato en aquellas circunstancias en que el beneficiario no hubiera cumplido estrictamente las obligaciones, responsabilidades, declaraciones y garantías establecidas en el contrato. La carta en la que se manifiesta el compromiso de dejar de usar SAO es un apéndice del SGA. Esta obligación contractual no es la única medida destinada a garantizar que las empresas dejen de utilizar y no vuelvan a utilizar SAO. Las EEB locales y el MEE no expiden un cupo de HCFC para una empresa que ha completado un subproyecto de conversión ni la registran. Sin un cupo de HCFC o sin estar registradas, las empresas están quebrantando las normas sobre SAO si vuelven a utilizar HCFC.

78. La Secretaría toma nota del sistema destinado a garantizar que las empresas que tienen un SGA continúen cumpliendo los reglamentos sobre las SAO después de terminar la conversión a una alternativa. Para otras empresas que no recibieron asistencia del Fondo Multilateral y que, por lo tanto, no firmaron SGA, el hecho de registrarlas en la EEB garantizará que estén cubiertas por el sistema de supervisión.

Información adicional sobre casos de uso ilícito de SAO detectados

79. Al proporcionar información adicional a la Secretaría sobre los casos de uso ilícito de CFC-11 que se han detectado, el Gobierno de China indicó que:

a) Una de las principales causas de la producción y el uso ilícitos de CFC-11 fue el bajo costo de los CFC y la formulación, que redujo el precio de los productos finales, dado que el proceso de producción con CFC-11 era comparativamente simple, y tenía un umbral relativamente bajo de dificultad técnica;

b) Ninguna de las empresas y proveedores de sistemas de espumas de PU en las que se encontraron restos de CFC-11 había recibido asistencia del Fondo Multilateral; y

c) En el caso de que se encontraran restos de CFC-11 en un proveedor de sistemas, según el sistema de supervisión en vigencia, los inspectores ambientales iniciarían los procedimientos para rastrear tanto al proveedor de los CFC como a los clientes de los polioles premezclados.

Sistema de supervisión del consumo de HCFC establecido para las espumas de PU y lecciones aprendidas

80. En lo que respecta a las principales diferencias entre el sistema de supervisión actual y el sistema de supervisión para los CFC, además de la información que figura en los párrafos 22 a 27 y 72 a 79 del estudio teórico, el Gobierno de China indicó lo siguiente:

a) Una de las deficiencias de la supervisión del CFC fue la falta de un procedimiento sistemático para registrar y rastrear las empresas que utilizan SAO. Esta fue una de las principales lecciones aprendidas, y, por lo tanto, se ha incorporado un sistema de rastreo de empresas en el período de eliminación de los HCFC;

b) Otra diferencia importante es que se ha fortalecido la capacidad de supervisión por medio del acopio de muestras sobre el terreno, detectores de agentes espumantes y desarrollo de un centro de pruebas;

c) Tanto el procedimiento sistemático para rastrear a las empresas que utilizan SAO como la mejora de la capacidad de supervisión y observancia de la ley se aplican a los HCFC y los CFC; y

d) Otra lección importante fue la necesidad de realizar verificaciones periódicas a nivel macro, para comprobar si el consumo de agentes espumantes estaba a la par de las espumas que se fabrican.

Cuestiones relacionadas con el registro de los proveedores de sistemas y las empresas de espumas de PU

81. El estudio teórico describe un sistema integral para supervisar la eliminación de SAO en las empresas registradas. Sin embargo, sobre la base de la información que figura en el estudio teórico, puede suponerse que el número de empresas no registradas (especialmente, EPM) es elevado. Además, el estudio también indica (párrafo 26) que en la época de la eliminación de CFC no había un procedimiento sistemático para registrar y rastrear las empresas que utilizan SAO. La Secretaría considera que el sistema para supervisar la eliminación de SAO en el sector de espumas de PU se podría fortalecer abarcando un gran número de empresas que hasta ahora no se habían registrado.

82. A continuación se presenta un resumen de la discusión sobre este asunto:

a) El Gobierno de China reconoce que es necesario que las EEB provinciales y locales modifiquen sus listas y bases de datos a fin de incluir no solo a las empresas que siguen utilizando HCFC sino también a aquellas que han eliminado las SAO. El Gobierno ha incluido la actualización del registro existente como parte de la metodología propuesta para verificar el uso de las sustancias controladas, pero reconoce que le llevará tiempo aplicar esta medida en todas las provincias. Como parte de la metodología, se alienta a las EEB a ampliar su registro por medio del intercambio de información sobre registro de empresas con la industria local (incluidos los proveedores de sistemas) y las administraciones de los comercios, búsquedas en Internet, encuestas y otros tipos de relevamientos;

b) A fin de ayudar a solucionar la dificultad identificada para agilizar la creación de registros, la Secretaría pidió aclaraciones acerca de si la multa de 200 000 yuanes sería un aliciente para que se registraran las empresas no registradas. El Gobierno de China explicó que, dado que el proceso de registro estaban aún en curso y era nuevo en algunas provincias, se podría eximir de la multa a las empresas que se presentaran voluntariamente en cualquier momento; y

c) A fin de que se cree un registro más exhaustivo, la Secretaría también preguntó si el Gobierno de China había considerado la posibilidad de tener un registro de empresas y proveedores de sistemas de espumas de PU en lugar de un registro de usuarios de HCFC. El Gobierno aclaró que los reglamentos sobre las SAO de China solo podían referirse a las sustancias controladas y que no podía regularse un sector solo porque era un sector. En este sentido, cuando los HFC pasen a ser sustancias controladas en China, habrá un mandato jurídico para requerir el registro.

Información adicional acerca del sistema actual de inspecciones sobre el terreno por las EEB

83. En relación con el protocolo que siguen actualmente las EEB para las inspecciones de las empresas después de la terminación de los proyectos (número de inspecciones por año, criterios para la selección de

las empresas que se inspeccionarán, metodología de inspección, criterio para determinar si existen sospechas de contravención, tipo y número de muestras tomadas por año), el Gobierno de China explicó que cada EEB elaboraba un plan de trabajo de supervisión diferente según sus circunstancias específicas, tales como concentración de empresas en la región, distribución de las empresas y sectores prioritarios.

84. Acerca de la función del Banco Mundial como organismo de ejecución en el sector de espumas de PU:

a) El Banco Mundial también puede inspeccionar una empresa que ya ha completado la aceptación nacional años después de la aceptación nacional, siempre que el acuerdo de subvención general para el proyecto esté vigente. Por ejemplo, en el marco del plan para el sector de espumas de PU de la etapa I, todas las conversiones se completaron antes de finales de 2018, pero el Banco Mundial podía organizar visitas en cooperación con el IECO hasta mediados de 2019, cuando finaliza el acuerdo de subvención. Se visitan aproximadamente cinco a diez empresas por año; y

b) Las disposiciones del Banco Mundial acerca de salvaguardias ambientales y sociales garantizan que se establezca un sistema para mitigar el impacto ambiental y garantizar la eliminación sostenible durante la ejecución y hasta la terminación, y que ese sistema sea adoptado por medio de reglamentos y procesos nacionales después de la terminación a fin de garantizar la sostenibilidad.

Metodología propuesta para verificar el uso de las sustancias eliminadas

Información adicional acerca del sistema propuesto de inspecciones sobre el terreno por las EEB

85. La metodología para verificar el uso de sustancias controladas propone que, mientras la etapa II del plan para el sector de espumas de PU esté en curso, el IECO o el Banco Mundial realizarán anualmente visitas aleatorias a por lo menos el 10 por ciento de las empresas de espumas de PU que realizaron la conversión un año antes o más. Además, la Secretaría sugiere que al finalizar la etapa II del plan para el sector de espumas de PU, el IECO o el Banco Mundial realicen visitas aleatorias al 5 por ciento de las empresas que han logrado la aceptación nacional por lo menos dos años antes para garantizar que no estén utilizando SAO y para verificar si todavía están utilizando la alternativa acordada. El Gobierno de China aseguró que esto se podría hacer dentro de la propuesta original del 10 por ciento, garantizando que algunas de las empresas estuvieran entre las primeras que completaran su conversión.

86. La Secretaría pidió una estimación general del costo anual de las inspecciones propuestas a todas los empresas y proveedores de sistemas de espumas de PU en la jurisdicción de una EEB determinada, señalando que el costo de una visita en el terreno a una empresa era de 500 $EUA más 450 $EUA por las muestras tomadas y 120 $EUA por las muestras sometidas a pruebas. El Gobierno de China informó que el costo anual estimado de las inspecciones era de alrededor de 2,25 millones de $EUA, basándose en una estimación de más de 100 proveedores de sistemas y más de 2 000 empresas de espumas en todo el país.

Detalles adicionales sobre los detectores instantáneos de agente espumante que se propone distribuir a las EEB

87. La Secretaría conviene en que, mediante el uso de los detectores instantáneos de agentes espumantes que comenzaron a estar disponibles recientemente y que se propone para las EEB, el proceso de inspección sobre el terreno y análisis de muestras resultaría más eficaz en función del costo. A petición de la Secretaría, el Gobierno de China informó que los detectores instantáneos eran de tamaño maletín y no de mano, y que podrían realizar pruebas de componentes de productos de espumas, agentes de procesos y polioles premezclados. En las pruebas, la muestra recolectada se coloca en el detector a través de la compuerta de alimentación. El detector luego genera un mapa de pruebas según las sustancias químicas que

contiene la muestra por medio de cromatografía de gases. Según los diferentes tiempos de pico de las sustancias químicas, se pueden detectar en forma preliminar los componentes de los agentes espumantes, como CFC-11, HCFC-141b, HFC-245fa y ciclopentano. El proceso de prueba de una muestra lleva usualmente alrededor de 20 minutos. El detector cuesta aproximadamente 20 000 $EUA. La Secretaría observa que se adquirirán y distribuirán alrededor de 35 detectores con los saldos de los planes para CFC, espumas de PU, disolventes, producción y servicio y mantenimiento de refrigeración[28].

88. Acerca de si los informes sobre la marcha de las actividades de los PGEH incluirían las conclusiones de estas medidas de supervisión, inspección y observancia aplicadas por las EEB, el Gobierno de China indicó que los informes sobre la marcha de las actividades del PGEH indicarían de manera exhaustiva los progresos logrados en la ejecución del PGEH dentro del período sobre el que se informa, con arreglo al Acuerdo con el Comité Ejecutivo. Como se indica en las observaciones de la Secretaría acerca de la auditoría financiera de los planes sectoriales para los CFC, el CTC y los halones (Parte III del presente documento), la Secretaría apoya el uso de los saldos restantes que se indicaron en algunos de esos sectores para el suministro de detectores instantáneos de SAO a las EEB, en el entendido de que el Gobierno de China continuará informando acerca de los resultados de los esfuerzos de supervisión de las EEB locales, incluidos aquellos casos en los que se detectó CFC-11, en los informes de auditoría financiera futuros. La Secretaría propone que, una vez que se hayan desembolsado todos los saldos restantes de los proyectos incluidos en la auditoría financiera y esos proyectos hayan terminado, el Gobierno de China continúe incluyendo esa información en el marco de los informes anuales sobre la marcha de las actividades del sector de espumas de PU del PGEH.

Metodología para hacer un balance de las materias primas en el sector de espumas

89. La Secretaría tomó nota con reconocimiento de la metodología para hacer un balance de las materias primas en el sector de espumas a fin de inferir los agentes espumantes totales, que se propone realizar en forma anual. Esta metodología podría fortalecer el sistema de supervisión del Gobierno de China para los agentes espumantes, así como apoyar una metodología de verificación para corroborar si aún se están consumiendo SAO que ya se han eliminado. Sin embargo, la Secretaría no tiene certeza de que los datos de ese análisis tengan la precisión suficiente para permitir que se verifique si puede haber agentes espumantes adicionales en el mercado. En particular, la variación en las partes de agente espumante que contienen los polioles, que varía según la aplicación, puede crear posibles incertidumbres respecto al uso de agentes espumantes (por ejemplo, aunque puede conocerse bien el uso de HCFC-141b o HFC, puede haber menos certidumbre respecto al consumo preciso de otros agentes espumantes). Considerando la magnitud de la producción anual de espumas rígidas de PU en China (aproximadamente 1,7 millones de tm por año), estas incertidumbres pueden ser amplias. La Secretaría considera, no obstante, que los análisis resultarían útiles para detectar cambios de tendencias que se podrían investigar más a fondo, en lugar de ofrecer un método de verificación autónomo.

90. Además, se discutieron las siguientes cuestiones relacionadas:

a) La Secretaría recomendó que se supervisen las ventas y el uso de MDI a fin de que se pueda establecer y mantener un registro de empresas y proveedores de sistemas de espumas de PU (en vez de usuarios de HCFC). El Gobierno de China indicó que se había intercambiado información y se habían recopilado y analizado datos sobre las ventas de MDI. En lo que respecta a la cuestión de la gestión de las ventas de MDI, como se indicó anteriormente, existen limitaciones en cuanto a qué información puede exigir el Gobierno de China que presenten las empresas, especialmente aquellas que no utilizan SAO y que, por lo tanto, no están sujetas a los reglamentos sobre las SAO;

[28] Consúltense las observaciones de la Secretaría que se exponen en la Parte III del presente documento.

b) A pedido, el Gobierno de China también confirmó que la información obtenida mediante el análisis de balance de masa se podría cotejar con la información de los proveedores de sistemas y las empresas que tenían un cupo o estaban registradas en una EEB a fin de tener una imagen medianamente clara de las características del mercado a nivel macro. Esto también incluye la cantidad de HCFC-141b producida;

c) Acerca de si esta metodología podría ayudar a detectar si había un uso ilícito extendido de CFC-11 en el sector, el Gobierno de China indicó que era una manera de supervisar si había un uso extendido de un agente espumante desconocido, pero que se entendía que no podría ayudar a detectar casos aislados de SAO prohibidas e ilícitas. El método de balance de masa de las materias primas puede indicar la producción general de espumas de PU y puede ayudar a cotejar los agentes espumantes del sector. No obstante, considerando que en el mercado se utilizan diferentes alternativas, como HFC, formulaciones de espumación acuosa y HFO, las brechas detectadas no pueden traducirse en forma directa en un uso ilícito de CFC. El método propuesto actúa como un sistema de alarma que desencadena otras investigaciones cuando se detecta una desviación.

Conclusiones

91. La Secretaría agradece la información detallada y la metodología propuesta para verificar el uso de sustancias controladas eliminadas que figuran en el estudio teórico del Gobierno de China, así como las aclaraciones adicionales que se expusieron anteriormente y las discusiones abiertas sobre las cuestiones planteadas. La Secretaría considera que el sistema para supervisar, presentar informes y verificar el cumplimiento de la eliminación de SAO en el sector de espumas de PU se ha reforzado con el correr de los años en función del marco reglamentario sobre las SAO, la capacidad de las instituciones a cargo de la supervisión y la cooperación con los interesados directos. La metodología puede fortalecerse y ampliarse aún más para abarcar una mayor cantidad de empresas. Resultaría útil comprender mejor la demanda de agentes espumantes producidos ilegalmente, así como los consumidores de estos. Como se describe en los párrafos anteriores, varias de las observaciones de la Secretaría ya se han incluido en el sistema de supervisión o se están teniendo en cuenta para continuar fortaleciendo el sistema. En el caso de las restantes observaciones, el Gobierno de China indicó que era más difícil llevarlas a la práctica.

92. A continuación se presenta un resumen de las observaciones de la Secretaría:

a) Los procedimientos establecidos para supervisar la eliminación de SAO en el sector de espumas de PU son eficaces para las empresas y proveedores de sistemas de espumas de PU que ya están registrados. El registro de otras empresas y proveedores de sistemas de espumas de PU, especialmente aquellos que nunca han recibido asistencia del Fondo Multilateral y las EPM, ayudará a aumentar la cobertura del sistema de supervisión. Son prioritarias las medidas propuestas en el estudio teórico para acelerar el registro de otras empresas;

b) Se deberá realzar la función de los proveedores de sistemas para identificar las EPM y proporcionar información sobre estas a las EEB. Esto también ayudará a mejorar el registro de empresas. Una inclusión más sistemática de los proveedores de sistemas en la ejecución de la etapa II del plan para el sector de espumas de PU del PGEH fortalecerá su capacidad para prestar asistencia a las empresas transformadoras y ayudar al mismo tiempo a las EEB a identificarlas y supervisarlas. La Secretaría considera que clasificar a los proveedores de sistemas como empresas de espumas de PU en lugar de distribuidores permitirá al MEE comprender mejor el sector y los flujos de agentes espumantes y polioles premezclados que contienen sustancias controladas;

c) Dado que la mayor parte de la labor se ha centrado en las 11 provincias donde se registra el 90 por ciento del consumo, también es importante fomentar la capacidad de todas las EEB en todos aquellos lugares donde se fabriquen y usen espumas de PU. La metodología propuesta incluye actividades de cooperación y asistencia técnica interregionales en el marco de la etapa II del plan para el sector de espumas de PU del PGEH, que también ayudarán a fortalecer las EEB para que lleven a cabo actividades de supervisión y observancia, en el entendido de que una vez que se haya establecido esa capacidad, las EEB asignarán presupuestos para actividades de inspección de rutina, como confirmó el Gobierno;

d) La Secretaría sugiere que el Gobierno continúe desarrollando y promoviendo mecanismos de protección de denunciantes de irregularidades para garantizar que puedan notificarse de manera segura las faltas de cumplimento de los reglamentos sobre las SAO y aumentando la conciencia en la industria acerca de las consecuencias ambientales y la desventaja competitiva que sufren las empresas que cumplen la ley como resultado de los comportamientos ilícitos;

e) El Gobierno de China tal vez desee considerar si resultaría útil contar con una mayor participación de los grandes usuarios finales en las actividades de supervisión y verificación, ya sea garantizando su responsabilidad por los materiales utilizados en sus proyectos o realizando inspecciones sobre el terreno y muestreos de productos finales en los grandes usuarios finales, además de las inspecciones propuestas a las empresas y proveedores de sistemas de espumas de PU;

f) La Secretaría recomienda que el Gobierno de China considere la posibilidad de desarrollar un sistema para identificar, registrar, controlar y notificar más adecuadamente las exportaciones de polioles premezclados que contienen sustancias controladas, y de utilizar ese sistema para presentar informes en el marco del mecanismo de iPIC informal y voluntario, si es posible;

g) Como se señala en el documento UNEP/OzL.Pro/ExCom/83/38, el Comité Ejecutivo tal vez desee aclarar que todos los países que operan al amparo del artículo 5 que reciben asistencia del Fondo Multilateral y producen o importan sustancias controladas para mezclarlas en polioles premezclados para exportación deberían notificar esas exportaciones, indicando el país o los países a los que se exportan los polioles premezclados y las respectivas cantidades de SAO que contienen; y

h) La metodología para hacer un balance de las materias primas en el sector de espumas de PU puede fortalecer el sistema de supervisión del Gobierno de China para los agentes espumantes, así como apoyar una metodología de verificación para corroborar si aún se están consumiendo SAO que ya se han eliminado. La Secretaría considera que la supervisión de las ventas y el uso de MDI también aportará información de referencia útil y ayudará a mantener un registro de empresas y proveedores de sistemas de espumas de PU (en vez de usuarios de HCFC).

93. La Secretaría apoya la metodología propuesta para verificar el uso de sustancias eliminadas en el sector de espumas de PU que se presenta en el estudio teórico, señalando las observaciones antes indicadas, y apoya los esfuerzos para mejorar el registro, las inspecciones sobre el terreno y la capacidad para realizar pruebas. La Secretaría recomienda que el Gobierno de China continúe informando los resultados de los esfuerzos de supervisión de las EEB locales, con inclusión de los casos en los que se detectó CFC-11, en los informes de auditoría financiera futuros y que, una vez que se hayan desembolsado todos los saldos restantes de los proyectos incluidos en la auditoría financiera y esos proyectos hayan terminado, continúe

incluyendo esa información en el marco de los informes anuales sobre la marcha de las actividades de la etapa II del sector de espumas de PU del PGEH.

Recomendación de la Secretaría

94. El Comité Ejecutivo tal vez desee:

a) Tomar nota con reconocimiento del estudio teórico sobre el sistema actual de supervisión del consumo de agentes espumantes en las empresas que recibieron asistencia en la etapa I del PGEH y la metodología de verificación para corroborar si se habían consumido o se estaban consumiendo las SAO que ya se habían eliminado en esas empresas, que se adjunta al documento UNEP/OzL.Pro/ExCom/83/11/Add.1; y

b) Considerar cualquier otra orientación adicional que el Comité Ejecutivo desee recomendar para la ejecución de la etapa II del plan para el sector de espumas de PU, teniendo en cuenta las observaciones que se indican en el párrafo 92 del documento UNEP/OzL.Pro/ExCom/83/11/Add.1.

PARTE III: INFORMES DE AUDITORÍA FINANCIERA SOBRE LOS SECTORES DE PRODUCCIÓN DE CFC, HALONES, ESPUMAS DE POLIURETANO (PU), AGENTES DE PROCESO II, DISOLVENTES Y SERVICIO Y MANTENIMIENTO DE EQUIPOS DE REFRIGERACIÓN EN CHINA

Antecedentes

95. De conformidad con las decisiones 71/12 b) ii) y iii)[29], 72/13[30], 73/20 b)[31], 75/18[32], 77/26 b)[33], y 80/27[34], el Gobierno de China, sirviéndose de los organismos bilaterales y de ejecución pertinentes, ha presentado a la 82ª reunión, los informes finales sobre la marcha de las actividades, investigaciones pertinentes, informes de asistencia técnica e informes de auditorías, incluyendo lo atinente a los intereses devengados durante el periodo de ejecución de los planes sectoriales de producción de CFC, halones, espumas de PU, agentes de proceso II, disolventes y servicio y mantenimiento de equipos de refrigeración.

96. En el transcurso de la 82ª reunión, el Comité Ejecutivo decidió posponer hasta su 83ª reunión el análisis de los informes de auditoría financiera sobre los sectores de producción de CFC, halones, espumas de poliuretano (PU), agentes de proceso II, disolventes y servicio y mantenimiento de equipos de refrigeración en china (decisión 82/17). Por ende, el Gobierno de China, sirviéndose de los organismos de ejecución pertinentes, ha presentado a la 83ª reunión, a fechas de abril de 2019, una actualización de los informes presentados ante la 82ª reunión.

97. A fin de reflejar las actualizaciones que han tenido lugar desde la 82ª reunión, la Secretaría se sirve del mismo documento empleado en dicha reunión 82ª[35], **incluyendo en negritas el nuevo texto asociado al examen del informe actualizado.**

Presupuestos previstos e informes sobre la marcha de las actividades

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[29] El Comité invitó al Gobierno a que, sirviéndose del organismo de ejecución pertinente y en lo que respecta a los futuros informes de auditorías financieras, provea los datos de todos los saldos de los fondos retenidos por el Gobierno para su distribución a las partes beneficiarias, y de los intereses devengados de tales saldos remanentes relativos a los planes sectoriales de agentes de proceso II, disolventes y servicio y mantenimiento de equipos de refrigeración; así como información sobre la marcha de las actividades atinentes a los planes de trabajo de tales sectores y su propuesta de cómo emplear los saldos potenciales.

[30] El Comité invitó al Gobierno a que, sirviéndose del organismo de ejecución pertinente, presente a la 73ª reunión los informes de las auditorías financieras de los sectores de agentes de procesos II, disolventes y equipos de refrigeración con CFC, junto con los planes relacionados con los fondos restantes para los sectores de halones, producción de CFC, espumas, agentes de procesos II, disolventes y servicio y mantenimiento de refrigeración con CFC, con una descripción de la manera en que el Gobierno de China los utilizaría para las actividades relacionadas con la eliminación de SAO y para facilitar la terminación de los planes de esos sectores a más tardar a fines de 2018.

[31] Al Gobierno y a los organismos bilaterales y de ejecución se les pidió que presentaran el 31 de diciembre de 2018, a lo más tardar, los informes anuales sobre la marcha de las actividades de ejecución, informes de auditoría e informes de intereses devengados durante los planes de producción de los sectores de CFC, halones, espumas de poliuretano, agente de procesos II, planes sectoriales para disolventes y servicios y mantenimiento de equipos de refrigeración, hasta la terminación de todas las actividades para el 31 de diciembre de 2018, y presentar los informes de terminación de proyectos relativos a los planes sectoriales a la primera reunión de 2019, a lo más tardar.

[32] Al Gobierno se le invitó a que incluyera los resultados de las actividades relativas a las pruebas de detección y de evaluación de los sustitutos sin CFC y el desarrollo de otros sustitutos nuevos en un informe a presentar una vez se hubieran terminado dichas actividades; recopilar información, de allí donde la hubiera, al respecto de la recuperación de los halones, como parte de su trabajo de recogida de información sobre la recuperación de los CFC durante las visitas a centros de desguace de buques; y acometer un estudio sobre la producción de CTC en su país y de su uso en aplicaciones de materias primas, y poner los resultados de dicho estudio a disposición del Comité para finales de 2018.

[33] Al Gobierno se le pidió que presentara a la 79ª reunión los informes finales de estudio sobre todos los proyectos de investigación y desarrollo ejecutados con fondos del Fondo Multilateral en el sector de producción de CFC.

[34] El Comité tomó nota, con reconocimiento, de que el Gobierno de China había confirmado que todas las actividades relacionadas con todos los planes sectoriales estarían terminadas para finales de 2018, que los informes de investigación y asistencia técnica pertinentes se presentarían a la última reunión de 2018 y que los informes de terminación de proyecto se presentarían a la primera reunión del Comité Ejecutivo de 2019.

[35] Parte I del documento UNEP/OzL.Pro/ExCom/82/20

98. Al 31 de agosto de 2018, los saldos remanentes alcanzaron los 22 236 071 $EUA. **Al 28 de febrero de 2019, el saldo remanente se ha visto reducido a un monto de 15 498 653 millones de $EUA.** En el Cuadro 1 se recoge una reseña de los desembolsos de fondos entre el **31 de agosto de 2018 y el 28 de febrero de 2019**, los saldos que quedan en los fondos, y las fechas previstas de terminación para cada uno de los planes sectoriales.

Cuadro 1. Presupuestos previstos para el uso de los fondos remanentes ($EUA)

Actividad	Saldo al 31 de agosto de 2018	Nuevo desembolso	Saldo al 28 de febrero de 2019	Fecha de terminación
Producción de CFC: cuantía total aprobada 150 000 000 $EUA (Banco Mundial)				
Contratación de apoyo técnico, y organización de talleres de tecnología alternativa	0	**0**	**0**	2014
Gestión de importación y exportación de SAO - sistema de información para gestión	0	**0**	**0**	2015
Investigación y desarrollo de alternativas a las SAO	420 089	**368 655**	**51 434**	**2019**
Supervisión y gestión	199 765	**29 465**	**170 300**	**2019**
Total	**619 853**	**398 120**	**221 733**	
Sector de halones: cuantía total aprobada 62 000 000 $EUA (Banco Mundial)				
Creación de un centro nacional de gestión del reciclaje de halones, incluyendo la creación de capacidad, equipos de detección y sistemas de información	1 975 083	**438 368**	**1 536 715**	2022
Creación de un centro de reciclaje de halones-1211, incluyendo la recogida, transporte, reciclaje y regeneración	3 017 686	**0**	**3 017 686**	2022
Creación de un centro de reciclaje de halones-1301, incluyendo la recogida, transporte, reciclaje y regeneración	1 039 530	**0**	**1 039 530**	2022
Asistencia técnica: investigación de las cantidades de halones para el sector de aviación civil y para el sector de reciclaje de buques; así como de políticas-normativas y reglamentos reguladores a efectos del reciclaje de los halones	2 917 936	**0**	**2 917 936**	2022
Eliminación de los halones y residuos de desecho	1 504 105	**0**	**1 504 105**	2022
Total	10 454 340	**438 368**	**10 015 972***	
Agentes de proceso II: cuantía total aprobada 46 500 000 $EUA (Banco Mundial)				
Creación de capacidad para **Burós provinciales y municipales de protección del medio ambiente – BPMA**	288 357	**280 000**	**8 357**	2018
Investigación sobre la sustitución de las SAO y desarrollo de tendencias en tecnologías alternativas	62	**0**	**62**	2018
Eliminación de residuos de CTC	5 445 970	**3 228 084**	**2 217 886**	**2019 y 2020****
Estudio sobre la producción de CTC y su uso en aplicaciones de materias primas	89 417	**10 412**	**79 005**	**2019 y 2020****
Supervisión, gestión y posevaluación	1 458 721	**36 081**	**1 422 640**	**2019 y 2020****
Total	7 282 527	**3 554 577**	**3 727 950**	
Espumas de PU: cuantía total aprobada 53 846 000 $EUA (Banco Mundial)				
Equipos de detección y evaluación de sustitutos sin CFC y creación de nuevos sustitutos	270 935	**270 935**	**0**	2018
Otras actividades provinciales sobre espumas (creación de capacidad para 11 provincias)	490 812	**290 812**	**200 000**	**Jun-2019**
Servicio técnico a las empresas de espumas a efectos de una mayor aplicación de nuevas alternativas	375 377	**375 377**	**0**	2018
Supervisión continua de la eliminación de CFC en el sector de espumas	370 373	**273 393**	**96 980**	**Mar-2019**
Supervisión y gestión de proyectos	147 901	**147 901**	**0**	2018
Total	1 655 398	**1 358 419**	**296 980**	

Actividad	Saldo al 31 de agosto de 2018	Nuevo desembolso	Saldo al 28 de febrero de 2019	Fecha de terminación
Servicio y mantenimiento de equipos de refrigeración: cuantía total aprobada 7 884 853 $EUA (Japón, PNUMA, ONUDI)				
Actividades en curso (por ejemplo, ocho centros de capacitación, capacitación en el sector de desguace y eliminación de buques, proyecto Shenzhen de demostración)	9 124	**9 124**	**0**	2018
Programas de capacitación para los subsectores de refrigeración comercial e industrial - RCI / refrigeración y climatización	551 849	**146 194**	**389 731**	**Jun-2019**
Investigación sobre fugas en refrigeradores durante su funcionamiento y durante las tareas de servicio y mantenimiento en equipos de refrigeración y de climatización con R-290	282 040	**0**	**282 040**	2018
Estudio de datos	80 552	**80 552**	**0**	2018
Supervisión y gestión	95 846	**95 846**	**0**	2018
Creación de capacidad para la supervisión y vigilancia de SAO (reasignación de fondos para actividades de capacitación)	0	**0**	**15 924**	**Jun-2019**
Total	1 019 411	**331 716**	**687 695**	
Sector de disolventes: cuantía total aprobada 52 000 000 $EUA (PNUD)				
Lucha contra las actividades ilegales atinentes a las SAO: creación de capacidad para 10 oficinas locales de aduanas	522 765	**69 646**	**453 119**	**Jun-2019**
Creación de capacidad en 14 provincias para personal que trate con SAO	340 000	**340 000**	**0**	2018
Concienciación del público y actividades de publicidad	0	**0**	**0**	2018
Evaluación de tecnologías alternativas e investigaciones	0	**0**	**0**	2017
Sistema de gestión electrónica de ficheros	92 307	**0**	**92 307**	**Jun-2019**
Gestión y supervisión de actividades	249 470	**246 573**	**2 897**	**Jun-2019**
Total	1 204 542	**656 219**	**548 323**	
Resumen				
Producción de CFC (150 000 000 $EUA - Banco Mundial)	619 853	**398 120**	**221 733**	**2019**
Sector de halones (62 000 000 $EUA - Banco Mundial)	10 454 340	**438 368**	**10 015 972**	**2022**
Agentes de proceso II (46 500 000 $EUA - Banco Mundial)	7 282 527	**3 554 577**	**3 727 950**	**2020**
Espumas de PU (53 846 000 $EUA - Banco Mundial)	1 655 398	**1 358 419**	**296 980**	**2019**
Servicio y mantenimiento (7 884 853 $EUA - Japón, PNUMA, ONUDI)	1 019 411	**331 716**	**687 695**	**2019**
Disolventes (52 000 000 $EUA - PNUD)	1 204 542	**656 219**	**548 323**	**2019**
Total	**22 236 072**	**6 737 419**	**15 498 653**	

*** Del saldo de 10,02 millones de $EUA, se comprometen 2,38 millones de $EUA para actividades en curso. Los 7,64 millones de $EUA sin comprometer se emplearán para la creación y funcionamiento del centro de reciclaje de halones-1211, operaciones de reciclaje de halones-1301, creación de capacidad para las estaciones de reciclaje de halones, adquisición de instrumentos de detección de halones, investigaciones para políticas-normativas e investigaciones relativas al reciclaje de halones, investigación de los volúmenes de halones en las zonas clave de China y eliminación de residuos y halones que no puedan usarse.**

**** El resto de las actividades contratadas está previsto culminen en diciembre de 2019. Se propone que los saldos sin asignar, de aproximadamente 2,25 millones de $EUA, se reasignen a la gestión, vigilancia y supervisión a largo plazo de SAO. Se prevé que todas esas actividades estén terminadas para diciembre de 2020.**

99. Los informes sobre la marcha de las actividades incluyeron los desembolsos al **28 de febrero de 2019**. Las auditorías financieras de los desembolsos al 30 de junio de 2018 las efectuó Daxin Certified

Public Accounts LLP conforme a las normas nacionales. Las conclusiones de dicha auditoria fueron que las declaraciones sobre donaciones y desembolsos respecto de la producción de CFC, halones, agentes de proceso CTC, espumas de poliuretano, disolventes y sectores de servicio y mantenimiento de equipos de refrigeración, se encontraban en situación de cumplimiento en lo tocante a las reglas estipuladas en el Protocolo de Montreal y de los estándares de contabilidad de China, y que han sido justa y equitativamente presentados por el **Centro Internacional para el Medio Ambiente**/Ministerio de Ecología y Medio Ambiente (**IECO**/MEE) de China. **No se ha encargado una auditoría financiera de los desembolsos a partir del 20 de junio 2018; la próxima auditoría financiera abarcaría del 1 de julio de 2018 al 30 de junio de 2019.**

100. Las actividades ejecutadas en cada plan sectorial desde el 1 de julio de 2017 se resumen seguidamente, a saber:

Sector de producción de CFC

101. Desde 2015, las únicas actividades que se siguen realizando en el sector de producción de CFC tratan de la supervisión, gestión e investigación y desarrollo de alternativas a las SAO. Entre las reuniones 80ª y 82ª se **han** desembolsado un total 402 414 $EUA**. Desde la 82ª reunión, se han desembolsado otros 398 120 $EUA.** Se prevé que el saldo remanente de **221 733** $EUA se desembolse para finales de **2019**.

102. En lo tocante a la investigación y desarrollo sobre alternativas a las SAO, se han seleccionado trece propuestas, y **todas** se han terminado; **doce han superado el punto de aceptación del proyecto** al tiempo que el último proyecto (en la Universidad de Beijing de Tecnología Química sobre un nuevo proceso de producción de HFO-1234yf y de HFO-1234ze en el laboratorio) **se prevé supere su aceptación de proyecto en junio de 2019. Desde la 82ª reunión, se han desembolsado 368 655 $EUA, habiendo de efectuarse el último pago de 8 050 $EUA tras la aceptación del último proyecto. A raíz de las fluctuaciones de las divisas entre las fechas de la firma de los contratos y aquellas en las que se efectúan los pagos, existe un saldo de 43 384 $EUA sin asignar que el Gobierno de China propone se use para adquirir instrumentos de supervisión y vigilancia de SAO para los Burós BPMA a fin de dotarlos de capacidad y alcanzar el cumplimiento de la eliminación sostenible en el consumo de CFC**.

103. A las tareas de supervisión y gestión se les ha asignado un total de 233 411 $EUA. El **IECO** ha desembolsado **63 111** $EUA[36] para producir materiales de capacitación en vídeo para aplicaciones de gestión de importación y exportación de SAO **(32 073 $EUA, con un contrato cuyo valor remanente asciende a 88 080 $EUA)**, **para un taller de capacitación que se celebró del 21 al 23 de enero de 2019 en Changsha para 140 funcionarios procedentes de todos los Burós BPMA (22 390 $EUA); producir un video dedicado al cumplimiento del sector, el cual se mostró el Día del Ozono de 2018 (32 073 $EUA, con un contrato cuyo valor remanente asciende a 80 080 $EUA); y para realizar la auditoría financiera de 2018 de todos los sectores (8 649 $EUA)**. El saldo lo empleará el IECO para adquirir instrumentos destinados a vigilar las SAO en los Burós provinciales y municipales de protección del medio ambiente (BPMA) para crear capacidad y alcanzar el cumplimiento sostenible de eliminación de los CFC. **En las fechas en que se terminó la redacción del presente documento, la Secretaría desconocía aún la cuantía exacta a la que ascendía el saldo remanente sin asignar.**

Sector de halones

104. Se desembolsó un total de 1 237 015 $EUA entre el último informe sobre la marcha de las actividades y el 31 de agosto de 2018, **además de desembolsarse también otros 438 368 $EUA hasta el 28 de febrero de 2019**. In 2014, En 2014, el IECO elaboró un plan para desarrollar el sistema nacional de

[36] Este valor difiere de los 29 465 $EUA que figuran en el Cuadro 1. En las fechas en que se terminó la redacción del presente documento, las razones de esta discrepancia seguían sin estar claras.

gestión y reciclado de halones (NHRMC), designándose el resto de la financiación del sector de halones enteramente a apoyar este programa. Entre 2015 y 2016, el IECO creó el NHRMC en cooperación con el centro de certificación de productos de lucha contra incendios, en el ámbito del Ministerio de Seguridad Pública. En 2017, el NHRMC publicó el volumen de halones reciclados en Shanghai, y trabajó con el gobierno y el sector privado para fomentar el reciclado de halones. Partiendo de la experiencia acumulada durante los últimos tres años y de la información sobre resultados recibida, en 2018 el NHRMC y el **IECO** rediseñaron el plan de trabajo, iniciaron un proyecto para desarrollar un sistema de información para gestión y reciclaron 1,5 toneladas de halones-1301 en Tianjin y Jiangsu. Una parte de la financiación remanente se empleará para adquirir equipos para los parques de bomberos, centros y burós locales de lucha contra incendios a fin de analizar los componentes de los productos con halones e identificar su pureza durante la fase de reciclado.

105. **En 2018, Shanghai Leinuo Security Technology Co., Ltd recicló además 450 kg of halon-1301 partiendo de los desguaces de buques desechados para vender. Al ser insuficiente el precio del mercado del halon-1301 reciclado para cubrir el costo de reciclaje, Leinuo solicitó al NHRMC un subsidio compensatorio, lo que el NHRMC está actualmente evaluando. En enero de 2019, se certificó formalmente a Leinuo como centro nacional de reciclaje de halon-1301 y recibirá ayuda para realzar su capacidad.**

106. El **IECO** se encuentra actualmente seleccionando empresas cualificadas para acometer la creación de un centro de reciclaje de halon-1211. Se prevé que el proyecto comience en 2019 y esté terminado en 2020. Durante este periodo, el IECO aportará asistencia a la empresa Zhejiang Dongyang Chemical Co., Ltd con objeto de cerciorarse del almacenamiento seguro de 2 261,4 toneladas de halon-1211. **En diciembre de 2018, el IECO y el NHRMC aprobaron el proyecto de 1,45 millones de $EUA para los nuevos cilindros y depósitos de almacenamiento y la creación y establecimiento de un sistema de vigilancia, supervisión y gestión de existencias. A día de hoy, el IECO y el NHRMC se encuentran atajando las preocupaciones de seguridad planteadas por el gobierno local y se prevé que el proyecto se reinicie pronto.** El IECO y el NHRMC tienen previsto organizar en 2019 la investigación sobre políticas-normativas y regulación reglamentaria a efectos del reciclado de halones.

107. **El IECO y el NHRMC firmarán un contrato por un valor de 200 000 $EUA con el departamento de lucha contra incendios de Shanghai para investigar los volúmenes y la distribución de halones existentes en el distrito de Shanghai. La investigación sobre los volúmenes de halones existentes en otras provincias se encuentra actualmente en fase de preparación.**

108. El NHRMC y el **IECO** se han comprometido a explorar la viabilidad de la cooperación internacional sobre el reciclado y la eliminación de halones, a efectos de asistir a otros países que operan al amparo de artículo 5 a alcanzar el objetivo de cumplimiento. En el transcurso de los próximos decenios, los productos de lucha contra incendios con HFC presentan el potencial de convertirse en los principales sustitutos de los productos con halones. Habida cuenta de que la Enmienda de Kigali permitirá reducir gradualmente la producción y el consumo de dichos HFC, la experiencia pertinente que se haya aprendido de la creación del NHRMC podría aplicarse al reciclado, recuperación, regeneración y eliminación los HFC.

109. **Partiendo de la financiación desembolsada a día de hoy, el Gobierno de China ha venido creando y gestionando gradualmente el NHRMC. Del saldo de 10,02 millones de $EUA, 2,38 millones de $EUA están ya comprometidos para actividades en curso. Los 7,64 millones de $EUA restantes aún sin comprometer se emplearán para mejorar en mayor grado el sistema de reciclaje y alcanzar la gestión sostenible de los halones, incluyendo: la creación y gestión del centro de reciclaje de halones -1211, las operaciones de reciclaje de halones-1301, la creación de capacidad para las centrales de reciclaje de halones, la adquisición de instrumentos de detección de halones, la investigación relativa a políticas-normativas y reglamentos reguladores para el reciclaje de halones, la investigación de los volúmenes de halones existentes en las zonas clave de**

China y la eliminación de halones y residuos que no puedan utilizarse. Estas actividades se implantarán entre 2019 y 2022.

Agentes de proceso II

110. Se desembolsó un total de 190 050 $EUA entre las fechas de la celebración de la **80ª reunión** y el 31 de agosto de 2018. **Desde aquellas fechas se ha desembolsado un total de 3 554 577 $EUA.** Seis **Burós BPMA** que trabajan con los productores de CTC y otras SAO recibieron asistencia para establecer oficinas de gestión de SAO, canales especializados para que las empresas informen sus datos sobre SAO, y para que acometan inspecciones in situ de las empresas. El proyecto ya se terminó y el último desembolso se efectuará a finales de **enero de 2019, por un total de 280 000 $EUA para esta actividad. Se prevé que el saldo remanente de 8 357 $EUA se asigne para fortalecer la supervisión, vigilancia y gestión de SAO.**

111. Se está ejecutando un proyecto de eliminación de residuos de CTC para respaldar a los productores de productos secundarios de CTC a eliminar la presencia de los residuos de su destilación en sus instalaciones de conversión y refino de CTC. Se firmó un total de 4,6 millones de $EUA con nueve empresas para construir incineradores nuevos (3), mejorar los vigentes (2), construir los dispositivos de reducción de residuos (2) y recibir los subsidios a los costos de explotación (2). **La construcción de los tres incineradores y de los dos dispositivos de reducción de residuos se ha terminado, y tanto los incineradores como los dispositivos han sido sometidos a pruebas; una de las empresas terminó la actualización de su incinerador, al tiempo que la otra aún no ha acabado la suya. La verificación in situ de las dos empresas receptoras de subsidios para gestionar las operaciones de los incineradores confirmó que se emplean para eliminar residuos de CTC. El volumen de desembolso para tales actividades fue de 3 228 084 $EUA, quedando pendientes de pago 1 371 915 $EUA que se abonarán al término de las actividades en diciembre de 2019. Se prevé que el saldo restante de 845 970 $EUA sea propuesto para asignar a la gestión, supervisión y vigilancia de SAO.**

112. En lo tocante a los requisitos estipulados en la decisión 75/18 del Comité Ejecutivo, en marzo de 2018 se lanzó en China un estudio sobre la producción de CTC y su uso en aplicaciones de materias primas. Se han elaborado cuestionarios para las empresas de producción de cloruro de metano (productores de CTC) y empresas que utilizan materias primas con CTC. **En abril de 2019 se presentó en chino la versión del informe; la Secretaría no pudo examinar dicho informe a tiempo para incluirlo en el presente documento.**

113. En la decisión XXIII/6 se estipula que tras el 31 de diciembre de 2014, el uso de CTC para los ensayos de aceite en agua solo se permitiría en el marco de una exención por usos especiales. En 2017, China anunció su compromiso de eliminar el uso de CTC en ensayos de laboratorio de aceite en agua para 2019. En enero de 2018, el IECO firmó un contrato con Tianjin Eco-Environmental Monitoring Center para crear normas alternativas y poder realizar ensayos. Se han determinado técnicas para reemplazar el uso de CTC con nhexano, se han creado tres estándares de ámbito nacional y se prevé que **entren en vigor el 1 de enero de 2019, habiéndose desembolsado 10 978 $EUA, lo que representa el último pago especificado en el contrato**. **El contrato con Beijing Guohua Jingshi Consulting Co., Ltd., se firmó en agosto de 2018 para continuar actividades de capacitación y seguir buscando tecnologías alternativas que permitan dejar de utilizar las SAO para usos analíticos en los laboratorios; el valor del contrato asciende a 110 224 $EUA, y ya se ha desembolsado el primer pago por valor de 10 978 $EUA. Se desembolsaron también otros 14 125 $EUA para los peritos de apoyo técnico con fines a evaluación, aceptación y verificación in situ de proyectos.**

114. Además de todo ello, se han lanzado dos proyectos para fortalecer la creación de capacidad a efectos del cumplimiento sostenible del Protocolo de Montreal. Uno de ellos es el diseño y construcción de un sistema informático para la notificación de datos sobre SAO en línea (etapa II) (**250 000 $EUA**). El sistema en línea **complementará el sistema de información para gestión en línea en el ámbito del**

HCFC que se creó en la etapa I del plan de gestión de eliminación del consumo en el sector de producción de HCFC al incorporar datos sobre todas las SAO **y servirá como plataforma de gestión para el MEE y los Burós provinciales y municipales de protección del medio ambiente – BPMA para vigilar y supervisar empresas de su ámbito jurisdiccional**. El otro proyecto es el de creación de capacidad para funcionarios de aduanas en la esfera de la supervisión y gestión de SAO (**750 000 $EUA**). **El IECO se encuentra coordinando la supervisión y gestión del comercio de SAO con el nuevo departamento de las Autoridades de Aduanas dadas las reformas institucionales a las que dichas Autoridades se han visto sometidas.**

115. **Ante el volumen de saldos sin asignar, de aproximadamente 1,24 millones de $EUA, el Gobierno de China propone acometer las actividades que se indican seguidamente para mejorar a la larga la gestión, supervisión y vigilancia de SAO, a saber:**

a) Construcción y actualización del sistema de supervisión y vigilancia en línea al respecto de la producción de CTC. Este sistema complementa al sistema de información para gestión de SAO, centrándose para ello en la producción, conversión, ventas y almacenamiento de existencias de CTC de todos los productores de CM;

b) Investigaciones sobre la producción de CTC y sus usos para materias primas. Esta actividad complementará el estudio presentado en línea conforme a la decisión 75/18, lo que efectuó un perito, centrándose en las emisiones de CTC durante la producción de CTC y usos como materia prima. Esta actividad está prevista como un sondeo *in situ* y verificación atinente a la producción de CTC y usos como materia prima. Las instalaciones de percloroetileno (PCE) no incluirán;

c) Apoyo a las empresas en desarrollo y suministro del reactivo necesario (substituto de CTC) que se aplica siguiendo la norma nacional enmendada. El suministro del substituto, PCE, ya no satisfice la demanda comercial del mercado tras la promulgación de la nueva norma. Esta actividad respaldaría a los fabricantes de los reactivos para instalar los medios de purificación necesarios de PCE a fin de cumplir con las prescripciones de la nueva norma y la demanda comercial;

d) Capacitación y creación de capacidad respecto de la supervisión y ejecución de la ley respecto de las SAO para los Burós BPMA. En esta actividad se impartirán cursos periódicos de capacitación para los Burós BPMA tratando de la gestión, inspección, supervisión, ejecución de la ley al respecto de las SAO. Se capacitará al personal de los Burós BPMA en el plano provincial, municipal y nacional que se ocupen de la supervisión y vigilancia del medio ambiente;

e) Supervisión del Mercado y recolecta de información sobre la venta de SAO. Se contratará a una empresa de asesoría para recolectar la información sobre el mercado y la venta de SAO, y para determinar las sospechas de ventas ilegales. La información correspondiente a tales ventas se notificará al MEE con vistas a tomar medidas ulteriores; y

f) Apoyo técnico, jurídico y sobre políticas-normativas atinentes a la gestión, inspección, supervisión y ejecución de la ley sobre las SAO, así como sobre la disposición de las

SAO, etc. Se contratarán peritos individuales para respaldo a las instituciones pertinentes.

Espumas de PU

116. Se desembolsó un total de 506 548 $EUA entre las fechas del último informe sobre la marcha de las actividades y el 31 de agosto 2018**, desembolsándose además otro monto adicional de 1 358 419 $EUA hasta el 28 de febrero de 2019. El saldo remanente de 296 979 $EUA se está empleando para la adquisición de un detector instantáneo de agentes espumantes y para el taller internacional sobre creación de capacidad para la implantación del Protocolo de Montreal que se celebró en marzo de 2019.** Se implantaron diez actividades de investigación en el sector de espumas de PU que se terminaron durante el primer semestre de 2018. Estas propuestas se seleccionaron para apoyar el desarrollo de formulaciones sin PAO y agestes espumantes de bajo PCA económicos que pudieran emplearse en empresas pequeñas y medianas (PIME), así como formulaciones de sistemas de polioles premezclados para optimizar las propiedades de estabilidad, desempeño y aislamiento de los productos con espumas.

117. A fechas de junio 2018, se culminaron los ensayos de campo de un atomizador en un emplazamiento de construcción situ en la provincia de Hebei en el que el agente espumante fue de HFO. En el ensayo de campo rociaron más de 2 350 m^2 de edificios de viviendas. La estabilidad dimensional, el desempeño del aislamiento y otras propiedades pertinentes de las espumas se evaluarán a lo largo del invierno en condiciones de baja temperatura ambiente **estando en curso el proceso de terminación**.

118. En diciembre de 2014, el **IECO** firmó contratos con cuatro proveedores de sistemas, lo que permitió establecer la capacidad de producción de polioles premezclados con base acuosa al instalar medios de producción y equipos de laboratorio, así como pruebas y ensayos de nuevas formulaciones. A día de hoy, los proveedores de sistemas suministran servicios técnicos a empresas de equipo derivado para la producción de espumas y han vendido más de 2 000 Tm de polioles premezclados alternativos a usuarios de equipos derivados, incluyendo a empresas PIME. Los cuatro proyectos se culminaron en junio de 2018 **y los proveedores de sistemas recibieron su último pago a principios de 2019.**

119. El **IECO** firmó también contratos con los **Burós BPMA** en 11 provincias/ciudades a efectos de mejorar el grado de concienciación pública sobre la protección de la capa de ozono, el fortalecimiento de la capacidad de cumplimiento, y asegurar que tras 2010 no volverían a usarse CFC ni ninguna otra SAO controlada. Hasta la fecha de notificación de informes, los 11 **Burós BPMA** han cumplido sus objetivos y condiciones estipuladas en el contrato. Los proyectos han fortalecido los conocimientos, la gestión y la capacidad de ejecución en estas 11 regiones, y han fomentado el aumento del grado de concienciación en el ámbito nacional de los reglamentos reguladores de gestión de SAO. Los 11 **Burós BPMA terminaron** los proyectos en diciembre de 2018 **y recibieron sus pagos finales estipulados en sus contratos**.

120. El Gobierno ha publicado las Regulaciones sobre gestión de SAO y la Circular sobre la Gestión de la Construcción de Instalaciones de Producción o Consumo de SAO, y ha tomado otras medidas para prohibir que se reúsen nuevamente los CFC que ya se eliminaron y ejecutar los controles de los HCFC. Sin embargo, el sector de espumas incluye a un gran número de empresas y varias aplicaciones. Por ende, el **IECO** ha continuado vigilando las actividades sirviéndose de contratos con las cinco provincias (es decir, Hebei, Henan, Shandong, Si Chuan y Tianjin), que es en donde se encuentran la mayoría de las empresas productoras de espumas y los proveedores de sistemas, para visitar a los corredores de productos químicos, proveedores de sistemas, y empresas productoras de espumas a efectos de recolectar muestras de agentes espumantes, sistemas de polioles premezclados, y productos de espumas ya acabados. Se han visitado más de 420 empresas productoras de espumas y proveedores de sistemas, y se han recolectado más de 780 muestras de materias primas y espumas. Con arreglo a los ensayos preliminares de las muestras, hay un pequeño porcentaje de ellas sospechoso de probablemente contener CFC/HCFC supuestamente ya

eliminados. **Se determinó que había tres empresas en Shandong en las que se usaba ilegalmente el CFC-11, siendo consecuentemente penalizadas conforme a las regulaciones de gestión de SAO.**

121. El Gobierno considera que las actividades de vigilancia han ejecutado eficazmente el sistema de políticas-normativas vigente. No obstante, la eficacia de las inspecciones y la vigilancia del sector productor de espumas puede verse menoscabada por el número de subsectores y de proveedores de sistemas, un conocimiento inadecuado por parte de los inspectores al respecto de la producción de espumas, y un número insuficiente de detectores de agentes espumantes (no todas las ciudades ni regiones los tienen). Además de todo ello, los reglamentos reguladores de la gestión de SAO son concisos y no contienen instrucciones pormenorizadas que permitan afrontar todas y cada una de las situaciones específicas que puedan surgir, lo que deja estas cuestiones en manos de las políticas-normativas y de la interpretación que hagan los **Burós BPMA**. Lo que es más, la tecnologías alternativas no han penetrado en el sector y lo elevado de los costos reduce la disposición de las PIME para convertirse a una situación de alternativas sin PAO y de bajo PCA. De todas estas dificultades son bien conscientes en el **IECO** y en el MEE, los cuales continuarán facilitando apoyo técnico a los **Burós BPMA** y a las sucursales de vigilancia del medio ambiente a través de una diversidad de canales.

122. **Se adquirieron y suministraron catorce detectores instantáneos de agentes espumantes que se asignaron a los cinco Burós BPMA para continuar la supervisión y vigilancia de la eliminación de los CFC en el sector de espumas. Fundamentándose en los resultados positivos que se obtuvieron de mejorar la eficiencia de las inspecciones, se asignaron 200 000 $EUA para adquirir otros diez detectores adicionales con miras a fortalecer y poner en práctica la capacidad en las provincias clave que no dispongan de equipos de pruebas.**

123. **Con objeto de mejorar la capacidad de las pruebas y de facilitar la ejecución de la ley (tan solo hay tres instituciones capaces de facilitar informes de pruebas certificados), el Gobierno de China respaldará otros seis centros adicionales de pruebas a fin de que adopten una norma técnica para someter a pruebas a los agentes espumantes y convertirse en laboratorios certificados para pruebas de agentes espumantes de PU para finales de 2019.**

124. **El Gobierno de China celebró también el Taller Internacional sobre la Creación de Capacidad para la Implantación del Protocolo de Montreal en China el 18 de marzo de 2019, en el que participaron más de 10 partes que operan al amparo del artículo 5 y otros que no lo hace, la Secretaría del Ozono, la Secretaría del Fondo, el Grupo de Evaluación Científica y todos los organismos de ejecución. Se comprometieron saldos de casi 100 000 $EUA para impartir este taller, los honorarios de las pruebas de las muestras de espumas y polioles devengados desde agosto de 2018 y un incremento de la capacidad para la realización de pruebas.**

Sector de servicio y mantenimiento de equipos de refrigeración con CFC

125. Entre la presentación del último el informe sobre la marcha de las actividades y el 31 de agosto de 2018 se desembolsó un total 550 473 $EUA, **desembolsándose también un monto adicional de 331 716 $EUA hasta el 28 de febrero de 2019**. Los 13 centros de capacitación creados por el **IECO** en 13 ciudades para impartir cursos de formación profesional en capacitación destinados a los técnicos de servicio y mantenimiento han culminado ya sus proyectos. A fechas de agosto de 2018, se ha capacitado a más de 4 100 técnicos, instructores y aprendices (tres de los centros ya han terminado su programa de capacitación). Durante el periodo 2017-2018, el **IECO** llevó a cabo visitas a emplazamientos y publicó informes finales de todos los 13 proyectos de capacitación.

126. Para finales de 2018 **se habían** capacitado otros 500 técnicos más en los otros dos centros de capacitación contratados en 2017. En 2018, el **IECO** firmó contratos con otros **cuatro** centros de capacitación a efectos de formar en prácticas idóneas de refrigeración **que se terminarán a mediados de 2019 y culminarán** una investigación sobre el control de fugas de refrigerante durante el funcionamiento

y las tareas de servicio y mantenimiento de sistemas de climatización con R-290; y continuar los dos estudios sobre el sector de desguace y eliminación de buques y sobre la cadena de frío en supermercados. **Se capacitó un total de 150 técnicos y gestores procedentes del sector de desguace y eliminación de buques en materias de políticas-normativas de gestión de SAO y sobre la reducción de SAO mediante operaciones de recuperación.**

127. Las actividades de vigilancia y gestión (incluyendo la asesoría, capacitación, evaluación y verificaciones) las llevará a cabo el **IECO** a fin de alcanzar el cumplimiento sostenible de eliminación de los CFC. **Se asignó un saldo de 15 924 $EUA de las actividades de capacitación a efectos de supervisar y vigilar la adquisición de detectores instantáneos de SAO como apoyo a los Burós BPMA para que acometan inspecciones *in situ*.**

Sector de disolventes

128. Entre el último informe sobre la marcha de las actividades y el 31 de agosto de 2018 se ha desembolsado un total de 773 756 $EUA, **desembolsándose también otro monto de 656 219 $EUA hasta el 28 de febrero de 2019**. Al 31 de agosto de 2018, 3 800 funcionarios de 10 oficinas de aduanas había recibido capacitación sobre cuestiones conexas a las SAO y en cada una de tales oficinas de aduanas ya se efectuaban regularmente verificaciones de SAO tras recibir equipos de pruebas. Al 30 de junio de 2018, más de 5 000 funcionarios locales de los **Burós BPMA** habían recibido capacitación sobre políticas-normativas conexas a las SAO y más de 18 000 personas habían participado en actividades de incremento del grado de concienciación del público. Los **Burós BPMA** organizaron más de 30 inspecciones *in situ* en empresas conexas a las SAO. **Todos los 31 Burós BPMA ayudaron a terminar los** informes de terminación y **recibieron** el último pago a finales de 2018.

129. El **IECO**, con el respaldo de la Universidad de Beijing, terminó el informe titulado Análisis de las repercusiones en la gestión de los HFC por la ratificación de China a la Enmienda de Kigali ("Analysis on the impacts of ratification by China of the Kigali Amendment on HFC management"). Se culminó la investigación sobre tecnologías alternativas y sobre la optimización del aceite de silicona en cinco instituciones[37]. Las actividades de gestión y vigilancia, incluyendo las verificaciones *in situ*, auditorías de supervisión y evaluaciones de proyectos se siguen efectuando.

130. **Un sistema electrónico de gestión de los documentos atinentes a las SAO está a punto de culminarse y el último pago, de 92 307 $EUA, se desembolsará una vez el sistema haya sido plenamente verificado y aceptado por el IECO. Poco después se desembolsará un saldo de 2 987 $EUA a efectos de respaldar el taller internacional sobre gestión de SAO en China. Se ha obligado un saldo de 453 119 $EUA para la adquisición de equipos de prueba instantáneos para SAO a efectos de respaldar a los Burós BPMA clave.**

131. **De conformidad con la decisión 73/20, el PNUD revisó el PCR presentado en 2012 para reflejar las actividades implantadas en el marco del sector de disolventes en el transcurso de los últimos cuatro años. Se presentará un PCR final cuando se desembolsen los saldos remanentes.**

Intereses devengados

132. En el Cuadro 2 figuran los montos de los intereses recogidos.

[37] Beijing Yuji, Dongyang Weihua, Shanghai Xilikang, Quzhou Sancheng y Huaxia Shenzhou.

Cuadro 2. Intereses notificados como recogidos de los planes sectoriales de China ($EUA)

Sector	1 de julio de 2017 – 30 de junio de 2018	1 de enero de 2010 – 30 de junio de 2018
Producción de CFC, halones, agentes de proceso II, y espumas de PU	2 837	21 109
Servicio y mantenimiento de equipos de refrigeración	5 574	93 565
Disolventes	11 364	325 636
Total	**19 775**	**440 310**

133. Al igual que en anteriores informes, los intereses devengados correspondientes al sector de disolventes son considerablemente superiores a lo recogido en otros sectores, dado que los intereses procedentes de cuentas de Yuan/Renminbi (Rbromuro de metilo) son más elevados que los de las cuentas en dólares de los Estados Unidos. **Los intereses devengados entre el 1 de julio de 2018 y el 30 de junio de 2019 se calcularán y recogerán en la auditoría financiera correspondiente a ese periodo.**

Observaciones de la Secretaría

Marcha general de las actividades

134. En la 80ª reunión, los organismos de ejecución ofrecieron la seguridad de que los saldos remanentes de financiación conexos a cada uno de los planes sectoriales se reembolsarían en su totalidad a finales de 2018 y que los informes de terminación de proyecto se presentarían a la primera reunión del Comité Ejecutivo de 2019. Posteriormente, el Comité Ejecutivo tomó nota, con reconocimiento, entre otras cosas, de que el Gobierno de China había confirmado que todas las actividades conexas a cada una de los planes sectoriales estarían terminadas para finales de 2018, que los informes de asistencia técnica y de investigación pertinentes se presentarían a la última reunión de 2018, y que los informes de terminación de proyecto se presentarían a la primera reunión del Comité Ejecutivo de 2019 (decisión 80/27 c)).

135. Lo que es más, en el transcurso de la 80ª reunión, el Comité mantuvo conversaciones oficiosas sobre la cuestión del reembolso de los saldos y sobre la notificación de los resultados de tales deliberaciones, y un miembro, con el respaldo de otro, dijo que, aunque la petición de que se reembolsaran al Fondo los saldos remanentes había sido retirada, en su opinión, y en la de otros, dichos saldos remanentes deberían en principio reembolsarse al Fondo o compensarse contra futuras aprobaciones, y que habrá que volver a tratar la cuestión de dicho reembolso de saldos en una futura reunión del Comité (UNEP/OzL.Pro/ExCom/80/59).

136. Los informes sobre la marcha de las actividades presentados a la 82ª reunión indican que el compromiso de completar todas las actividades para finales de 2018 **no se ha cumplido** en el caso de varios planes sectoriales, y que se **había** propuesto prorrogar algunos de ellos hasta 2020 (agentes de proceso II) y 2022 (halones). Se tomó nota también de que todos los demás planes sectoriales cuya fecha de terminación prevista es diciembre de 2018 (producción de CFC, espumas de PU, servicio y mantenimiento, disolventes) **presentaban** saldos remanentes, cuyo reembolso **estaba** previsto para 2019. Del saldo de 25,89 millones de $EUA, al 30 de junio de 2017, sólo se han desembolsado 4,13 millones de $EUA (16 por ciento). El saldo actual de 22,24 millones de $EUA existente en **la 82ª reunión ascendía** tan solo a un 43 por ciento del saldo total de 52 millones de $EUA disponibles a 31 de diciembre de 2009.

137. El Gobierno de China tomó nota de las cuestiones planteadas e indicadas supra, e hizo hincapié en que no existía ninguna decisión o requisito específico por los que hubiera que reembolsar los fondos, añadiendo además que los fondos remantes se necesitan para alcanzar el objetivo general de una eliminación permanente y sostenible y así se han programado consecuentemente. Además, el Gobierno de China indicó que:

a) Todas las actividades de peso en los sectores de producción de CFC, espumas de PU, disolventes y servicio y mantenimiento de equipos de refrigeración se terminarán como

estaba programado, para diciembre de 2018, y los desembolsos finales se efectuarán en 2019 tras la terminación satisfactoria de las actividades en diciembre de 2018;

b) La principal razón para no haber terminado las actividades en el sector de halones es la de que de 2014 a 2018, el **IECO** se centró en poner los cimientos primero y construir después sobre ellos el sistema nacional de gestión y reciclado de halones. El **IECO** resumió las lecciones aprendidas en el proyecto de demostración del banco de halones (2008-2013) y estableció un plan estratégico que permitió crear el sistema de reciclado de halones en 2014. Tras cuatro años de esfuerzos, el sistema nacional de gestión y reciclado de halones está en vigor y en funcionamiento;

c) El incumplimiento del plan sectorial de agentes de proceso II se debe a tres razones, a saber: en primer lugar, mientras que en China la eliminación de los residuos de CTC se controlaba además mediante el sistema de gestión de desechos peligrosos, el **IECO** terminó primeramente el análisis de viabilidad antes de lanzar el proyecto, incluyendo en ello visitas con peritos a los emplazamientos de los productores de CTC y centros de eliminación de desechos peligrosos, y varias rondas de conversaciones con los **Burós BPMA**. En segundo lugar, la creación de la capacidad de los **Burós BPMA** constituye un proyecto de larga duración en el que a los **BPMA** se les pidió que llevaran a cabo un gran número de actividades y cumplir con los hitos pertinentes. Por último, los CTC, como producto secundario de las instalaciones de clorometano, se seguirán generando, y se prevé que su uso para materias primas continúe en un futuro. Por ende, siempre se requerirá la vigilancia ininterrumpida y de larga duración de la producción y uso de los CTC. Y es necesario que el MEE mejore y refine los reglamentos reguladores.

Observaciones adicionales sobre la marcha general de las actividades partiendo del informe actualizado que se presentó a la 83ª reunión

(**Esta subsección completa de los párrafos 138 a 148 es nueva. Sin embargo, para facilitar la lectura se ha eliminado la negrita**.)

Fecha de terminación de los planes sectoriales

138. En la 82ª reunión, el Gobierno de China indicó que todas las actividades de peso considerable de la producción de CFC, espumas de PU, sectores de disolventes y servicio y mantenimiento de equipos de refrigeración se terminarían conforme al programa calendario previsto para diciembre de 2018 y que los desembolsos finales se efectuarían para 2019 tras la terminación satisfactoria de las actividades en diciembre de 2018; mientras que la terminación de los planes sectoriales para agentes de proceso II y de los halones serían para diciembre de 2020 y diciembre de 2022, respectivamente. Sin embargo, el Comité Ejecutivo decidió aplazar, hasta su 83ª reunión, el examen de los informes de auditoría financiera (decisión 82/17). Las actualizaciones indican que no se terminó ninguno de los planes sectoriales en diciembre de 2018 dado que todos ellos tenían aún en curso o planificadas actividades adicionales en 2019.

139. Tras tomar nota de que el Comité Ejecutivo no había tomado una decisión sobre prorrogar los proyectos más allá de diciembre de 2018, la Secretaría decidió que en 2019 no se ejecutarían más actividades. El Gobierno de China estimó que la decisión de que no se ejecutaran más actividades en 2019 no podría considerarse correcta ni incorrecta desde el punto de vista de dicho Comité.

140. Las fechas actualizadas para la terminación de los planes sectoriales propuestas por el Gobierno de China son junio de 2019 para la producción de CFC, espumas de PU, sectores de disolventes y de servicio y mantenimiento de equipos de refrigeración, diciembre de 2020 para el agente de proceso II y diciembre de 2022 para el plan del sector de halones.

Empleo de fondos de varios sectores para sufragar actividades comunes

141. Se tomó nota también de que la parte de los saldos de varios de los sectores se estaban asignando a esferas que se solapaban y eran de carácter intersectorial y correspondían a los planes generales de supervisión y vigilancia (por ejemplo, la adquisición de identificadores de SAO, asistencia a las aduanas, talleres de supervisión y vigilancia, el costo de la auditoría técnica de todos los sectores a un sector, es decir, producción de CFC). El Gobierno de China indicó que algunos de estos saldos están exactamente siendo asignados a este tipo de actividades tras producirse fuentes indicaciones procedentes del Comité y de la Secretaría de que los saldos deberán desviarse y alejarse del reducido enfoque de los planes de sector individual con objeto de supervisar y vigilar a fin de asegurar una eliminación sostenible de SAO, especialmente en la eliminación sostenible de los CFC-11.

142. En lo tocante a la creación de capacidad para los Burós BPMA, presente en diversos sectores y prácticamente terminada, el Gobierno de China facilitó un resumen general de la asistencia prestada a lo largo de los años y de los resultados obtenidos. Un total de 31 Burós BPMA participaron en el proyecto de creación de capacidad, atinente a las SAO, en el transcurso del último lustro con el respaldo, respectivamente, del plan sectorial de la espumas de PU (11 BPMA, 2 900 000 $EUA), el plan sectorial de agentes de proceso II（6 BPMA, 2 800 000 $EUA) y del plan sectorial de disolventes (14 BPMA, 3 880 000 $EUA).[38]

143. A continuación se recoge un breve resumen de las actividades facilitadas por el Centro Internacional para el Medio Ambiente (IECO):

a) Creación de un mecanismo de coordinación para el cumplimiento destinado a la protección de la capa de ozono en el plano de gobierno local; realización de un estudio sobre los datos de consumo y producción de SAO, y sobre las ventas, importaciones y exportaciones de SAO, allí donde fuere pertinente; así como identificación de las empresas consumidoras de SAO en su jurisdicción;

b) Control estricto de nuevos proyectos de construcción sirviéndose de la aprobación en el plano local de las evaluaciones de impacto medioambiental a fin de asegurar que en China no se aprueben nuevas instalaciones de producción y consumo de SAO, a excepción del uso como materia prima;

c) Talleres de capacitación organizados sobre gestión y cumplimiento relativos a las SAO, centrándose en las empresas y funcionarios tanto de la ciudad como del campo. Recibieron capacitación más de 35 000 funcionarios de Burós BPMA – y otras autoridades pertinentes, así como más de 13 000 trabajadores de la gestión de empresas. Actividades organizadas para incrementar el grado de concienciación sobre la protección de la capa de ozono, en todo el país, y también por medio de internet, televisión, escuelas y comunidades;

d) Medidas tomadas conjuntamente para impedir conductas ilegales sobre SAO partiendo de la información recibida en la plataforma de notificación y otras fuentes, el ministerio y los Burós BPMA.

144. Además, y utilizando fondos del sector de producción de CFC, se celebró un taller de capacitación en Changsha, provincia de Hunan del 21 al 23 de enero de 2019 para 140 funcionarios de todas las provincias, a fin de compartir experiencias y lecciones aprendidas sobre la gestión de SAO.

[38] Se puso a disposición de la Secretaría un Cuadro que recogía el valor de los contratos firmados con cada Buró BPMA.

145. En lo tocante al plan para suministrar detectores instantáneos de SAO a los Burós BPMA para fortalecer sus capacidades de ejecución y supervisión, lo que está también presente en varios planes sectoriales, el Gobierno de China facilitó también un resumen general. La financiación total para este objetivo se estima en 768 479 $EUA con la participación de las siguientes fuentes: el plan de producción de CFC (99 436 $EUA), el plan del sector de espumas PU (200 000 $EUA), el plan del sector de disolventes (453 119 $EUA) y el sector de servicio y mantenimiento (15 924 $EUA). A fin de utilizar los fondos eficientemente, el MEE prevé combinar los saldos de esos cuatro sectores para adquirir el mismo tipo de detectores para los Burós BPMA. El MEE prevé adquirir los detectores siguiendo una adquisición centralizada, en la medida de lo posible. Ello cubrirá todos los Burós BPMA, especialmente los de las zonas principales de consumo de espumas de PU, a las cuales se las equipará con más detectores.

146. El Gobierno de China explicó también que los detectores instantáneos son del tamaño de una maleta, capaces de someter a pruebas a los componentes de los productos de producción de espumas, y agentes espumantes, así como a los polioles premezclados. En la prueba, la muestra recogida se coloca en el detector por la puerta de alimentación. El detector genera seguidamente la cartografía de comprobación de los productos químicos presentes en la muestra por el método de cromatografía de gases. Al igual que es el caso de los diferentes máximos de los productos químicos, el componente de los agentes espumantes puede detectarse y seleccionarse preliminarmente. La totalidad del proceso de pruebas de una muestra requiere unos 20 minutes. El costo es de 20 000 $EUA por unidad y pueden producirse localmente.

147. La Secretaría respalda que se utilicen estos saldos remanentes para suministrar detectores instantáneos de SAO a los Burós BPMA, dándose por entendido que el Gobierno de China continuará notificando sobre los resultados de los Burós BPMA en los futuros informes de auditoría financiera, supervisando y vigilando los esfuerzos, incluidos los casos en los que se detectara la presencia de CFC-11. Una vez se hayan desembolsados todos los saldos remanentes de los proyectos que se recojan en la auditoría financiera y esos proyectos se hayan terminado, la Secretaría propone que el Gobierno de China continúe notificando en el marco de los informes anuales sobre la marcha de las actividades del plan sectorial de eliminación de HCFC de producción de espumas PU.

Resumen de los saldos remanentes y actividades que se proponen

148. En síntesis, partiendo de la información facilitada por el Gobierno de China, del saldo de 15,49 millones de $EUA del fondo, ya se ha asignado a actividades en curso un total de 5,60 millones de $EUA, de los que 768 479 $EUA ya han sido asignados para suministrar los detectores instantáneos de SAO a los Burós BPMA como parte de las actividades de supervisión y vigilancia. De los fondos aún sin asignar, 7,64 millones de $EUA pertenecen al plan sectorial de halones y se emplearán en las actividades destinadas a mejorar el sistema de reciclaje y a lograr la gestión sostenible de los halones (tal y como se describe en la sección anterior sobre halones), 2,25 millones de $EUA pertenecen al plan sectorial del agente de proceso II, de los que 1 millones de $EUA se emplearán en el sistema en línea de gestión de SAO y en capacitación de funcionarios de aduanas, y 1,24 millones de $EUA se emplearán en seis actividades de fortalecimiento a largo plazo, actividades sostenibles de supervisión y vigilancia de SAO (tal y como se recoge en la sección anterior sobre agente de proceso II, recogiéndose más abajo las observaciones de la Secretaría sobre tales actividades de supervisión y vigilancia).

<u>Supervisión y vigilancia sostenibles de la eliminación</u>

149. Cada uno de los planes sectoriales a los que se ha asignado fondos para realizar actividades que la Secretaría considere oportuno, contribuiría a la larga a la supervisión y vigilancia sostenibles de la eliminación, incluyendo la supervisión y gestión, las actividades relativas a la gestión de información, la creación de capacidad para **Burós BPMA**, y otras actividades. **En la 82ª reunión la Secretaría pidió que** el Gobierno de China facilitara información adicional sobre cómo contribuirían, a la larga, a las actividades de supervisión y vigilancia sostenible relativas a la eliminación. Las aportaciones facilitadas por el Gobierno de China y las observaciones de la Secretaría se indican seguidamente.

Sector de producción de CTC y agente de proceso

150. El Gobierno indicó que el CTC sigue siendo un subproducto de las instalaciones de clorometano (junto con el cloruro de metilo, el cloruro de metileno y el 1,1,1-tricloroetano) en las que la relación de CTC producido se reduce lo más posible. El CTC sigue empleándose para producir materias primas en un cierto número de productores de productos químicos, en aplicaciones de agente de proceso en las que se controlan las emisiones de CTC, y para usos en laboratorio según aprueben las Partes en el Protocolo de Montreal, y el sistema chino de cuotas y registro. A fin de asegurar que la producción y consumo de los CTC es reducida y se limita a los volúmenes permitidos a China, las cuotas de consumo de CTC en laboratorios y en aplicaciones de agente de proceso las emite el MEE/**IECO** a las empresas pertinentes. Cada usuario de materias primas de CTC tiene que registrarse en el MEE/**IECO**. A los productores cualificados de CTC se les permite vender CTC a los usuarios de dicha substancia registrados y con cuota. Todo exceso de CTC producido por productores autorizados tiene que convertirse a cloruro de metileno/percloroetileno o incinerarse. De ahí que se requiera la supervisión y vigilancia continua de la producción y uso de los CTC, y la notificación de la producción de CTC / datos de consumo al MEE/**IECO**, y de los resultados de la inspección regular a los **Burós BPMA**.

151. A fin de fortalecer la supervisión y vigilancia diaria de los productores de CTC, tanto por parte del MEE como de los **Burós BPMA**, el sistema de supervisión y vigilancia de CTC en línea se ha planificado para reiniciarse y mejorarse. Se establecerá una plataforma de supervisión y vigilancia en línea, en la que el MEE y los **BPMA locales** obtendrían datos de los productores de CTC en tiempo real.

152. Como ya se identificó en la implantación del plan de eliminación de la producción de CTC, los residuos que contengan CTC se generan en la producción de CTC. De no incinerarse o destinarse a su incineración, existe el peligro de que puedan recuperarse y venderse para usos ilegales. A efectos de reducir ese peligro, el **IECO** ha establecido nueve instalaciones de incineración de cloruro de metileno y los **Burós BPMA** locales tendrán que vigilar la eliminación de los residuos de CTC.

153. En 2017, China anunció su compromiso de eliminar el uso de CTC en ensayos de laboratorio de aceite en agua para el año 2019. A fin de sustituir el CTC por un agente extractor sin SAO en las pruebas de aceite en agua, el MEE ha llevado a cabo investigaciones, ensayos y análisis que han servido para determinar de qué forma sustituir los CTC y se prevé que las normas pertinentes de ámbito nacional se den a conocer en próximas fechas. Puesto que el reemplazamiento de los CTC no es solamente una cuestión técnica, el MEE continuará ejecutando la capacitación y defensa de tecnologías alternativas y lanzará un proyecto que fomente que las empresas mejoren la calidad de los reactivos alternativos a efectos de sustituir el uso de los CTC en los laboratorios.

154. El Gobierno indicó también que entendía el hecho de que los fondos remanentes pudieran además emplearse para cualquier nuevo agente de proceso que las Partes pudieran decidir añadir a la lista de tales agentes controlada por el Protocolo de Montreal.

155. Al comprender estos retos, China ve la necesidad de extender el programa más allá de 2018 y continuar usando los fondos para asegurar la sostenibilidad de la eliminación de los CTC para usos controlados.

156. La Secretaría tomó nota, con reconocimiento, de la propuesta para asignar al sector 1 200 000 $EUA para gestión y vigilancia a largo plazo. Al tiempo que respaldaba la asignación de finanzas a tal fin, la Secretaría tomó nota del considerable nivel de financiación e intentó entender mejor cómo las actividades que se financiarían tendrían relación con las ya acometidas. La Secretaría buscó también una aclaración sobre cómo obtendrían los productores de CTC sus autorizaciones; cómo podrían registrarse o inscribirse los usuarios y si dicha inscripción se restringiría a los usuarios con una aplicación de agente de proceso ya demostrada, al uso de materias primas, o al uso de laboratorio; si **IECO** asignó una cuota para CTC y cómo lo hizo; si mediante la información adicional conexa al sistema de supervisión en línea, incluyendo el punto

en el que se prevé entre a estar en funcionamiento; y si todas las instalaciones de clorometano tenían forzosamente que disponer y gestionar un incinerador para eliminar los residuos de CTC.

157. El Gobierno de China informó de que hay 15 productores de clorometano con una coproducción de CTC y de otros clorometanos. Solo 3 de los 15 productores de clorometanos tienen permiso para vender CRC a usuarios registrados a tal efecto, tratándose de una cuota anual otorgada por el **IECO** para fines de materias primas, usos de laboratorio, y uso de agente de proceso solamente. Solo los productores de CTC que disponen de una cuota de producción anterior a 2007 tienen autorización para vender CTC. El EE/**IECO** revisa su situación anualmente.

158. En total son 8 las empresas con autorización para uso de laboratorio y uso de agente de proceso que requieren solicitar al MEE una cuota de adquisición anual. En el caso de 2017, el MEE expidió cuotas por un volumen de 395 Tm para estas ocho empresas. En el caso de los usuarios de materias primas, el MEE desempeña la gestión anual del registro. El usuario de CTC como materia prima que solicite la inscripción tiene que presentar los documentos necesarios para la aprobación, incluyendo una evaluación de impacto medioambiental. El **IECO** publica los resultados de la inscripción en su sitio Web tras examinar los documentos presentados a efectos de confirmar el uso de las materias primas y la cantidad de CTC, lo que no puede exceder de la capacidad aprobada a la instalación de producción de tales materias primas que figura en el documento de evaluación de impacto medioambiental. La inscripción especifica el tipo de producto a fabricar con CTC y la cantidad de CTC.

159. En el caso de China, es necesario eliminar residuos de CTC para poder cumplir con los reglamentos reguladores de gestión de desechos peligrosos, el cual es un régimen diferente al de los reglamentos reguladores de las SAO. Con arreglo a la actual política-normativa, los productores de CM podrían elegir disponer de los residuos de CTC en sus propias instalaciones de eliminación con una evaluación de impacto medioambiental aprobada por los **Burós BPMA**, o bien enviar los residuos a un centro de eliminación de desechos peligrosos autorizado para ello. Los productores tienen que informar del volumen de residuos producido, llevados y almacenados a los **BPMA locales**. Además, las instalaciones de vigilancia interna las supervisan los **Burós BPMA** con objeto de asegurar el cumplimiento para con la norma de descarga de ámbito nacional y los requisitos de la evaluación de impacto medioambiental autorizada. **IECO** aclaró ulteriormente que tres de los productores de **CM forman parte de un mismo grupo de empresas de producción de HCFC-22; no obstante, esas instalaciones de producción de CM no forman parte de las empresas productoras de HCFC-22 sino que son empresas independientes dentro del grupo de empresas. Por ende, los incineradores empleados para la destrucción de los subproductos HFC-23 son diferentes de los incineradores empleados para destruir los CTC; los subsidios facilitados para destruir los subproductos HFC-23 son también distintos a los aportados para destruir los CTC.**

160. Los **Burós BPMA** inspeccionan a todos los productores de CTC y a los usuarios inscritos en el marco de su jurisdicción. De conformidad con los reglamentos reguladores vigentes, no existe un requisito de obligado cumplimiento para la frecuencia de la inspección pero, en la práctica, es de una vez al año, como mínimo. Los **Burós BPMA** inspeccionan a los distribuidores que almacenan CTC en el emplazamiento. La inspección regular de los productores de CTC y de los usuarios de materias primas y de otros usos de materias primas continuarán una vez se haya agotado la financiación y se haya culminado el proyecto.

161. El sistema de vigilancia en línea de los CTC se clausuró y cerró en 2015 a raíz de una cuestión técnica. Ese sistema solo cubre a los productores de CM en virtud del plan sectorial del CTC, pero no a los nuevos productores de clorometano, y por eso MEE/**IECO** ha venido trabajando para encontrar formas de expandir el sistema de vigilancia de línea de los CTC para todos los que lo produzcan.

162. El Comité Ejecutivo invitó al Gobierno de China a acometer un estudio sobre su producción de CTC y su uso en aplicaciones de materias primas y poner las conclusiones del estudio a disposición del Comité Ejecutivo para finales de 2018 (decisión 75/18 b) iii)). **La Secretaría recibió el 23 de abril de**

2019 la versión china del informe. IECO se encuentra en proceso de traducir el documento. El Comité Ejecutivo puede estimar oportuno pedir a la Secretaría que prepare un documento que se fundamente en dicho informe y lo presente a la 85ª reunión.

163. **Está previsto emplear los saldos remanentes para el sistema de gestión de SAO en línea (250 000 $EUA), para crear capacidad en las Autoridades Aduaneras (750 000 $EUA), y para seis actividades destinadas a fortalecer a largo plazo la supervisión y vigilancia sostenible de SAO (1 24 millones de $EUA). La Secretaría toma nota de lo que sigue, a saber:**

a) **El sistema de gestión de SAO en línea apoyará que todas las empresas que consuman SAO soliciten ser usuarios de SAO y se registren como tales, y que dichas empresas notifiquen datos. Por consiguiente, la Secretaría respalda la propuesta, en principio, al tiempo que toma nota de que dicha Secretaría no está bien familiarizada con los pormenores del actual sistema de gestión de SAO en línea como para poder identificar cómo se modificará el sistema y, por lo tanto, lo que supone un volumen razonable de financiación para esta actividad. Además, la financiación procedente de otros proyectos, planes sectoriales de producción de bromuro de metilo, de equipos de refrigeración comercial e industrial y equipos de climatización de salas en el ámbito de los planes de gestión de eliminación de HCFC (PGEH), y planes de gestión de eliminación del consumo en el sector de producción de HCFC, se han utilizado de forma similar para fortalecer el sistema de gestión de SAO en línea. Tal agrupación de finanzas en común es muy probable que redunde en un uso eficiente de recursos, si bien presenta un reto a la supervisión y vigilancia del avance en la marcha de actividades financiero y de ejecución;**

b) **La financiación atinente al sector de producción de bromuro de metilo es similar a la creación de capacidad para las Autoridades Aduaneras. El IECO aclaró que el contrato aplicable al sector de producción de bromuro de metilo se centra en el uso del mismo para usos de cuarentena y usos previos al embarque (QPS), mientras que en el caso de la creación de capacidad en el ámbito del plan de agentes de proceso II se centraría en los esfuerzos en la lucha contra el contrabando. Dada las demoras para firmar el contrato en el ámbito del sector de producción de bromuro de metilo, la Secretaría considera que será importante supervisar estrechamente el progreso que experimenta esta actividad a fin de asegurar que puede culminarse plenamente para diciembre de 2020;**

c) **Si bien las seis actividades propuestas serán útiles, la Secretaría no tiene claro el volumen de financiación necesario que asignar a cada actividad. Además, la Secretaría es de la opinión de que un mayor grado de notificación sería de utilidad al Comité Ejecutivo en lo tocante a los resultados de algunas de las actividades. Por ejemplo, la actividad correspondiente a la supervisión del mercado podría aportar un mejor entendimiento de cómo las instalaciones que produjeron CFC-11 fueron capaces de adquirir CTC. Lo que es más, la actividad de supervisión del mercado parece ser que podría desempeñarla una empresa de asesoría mientras dure el contrato de dicha actividad. La Secretaría sugiere que esta supervisión del mercado continuaría siendo útil tras culminarse el proyecto, y que, por ende, a tal efecto se asignará un presupuesto en el ámbito del MEE. La construcción y actualización del sistema de supervisión y vigilancia en línea sobre la producción de CTC respaldaría esta supervisión del mercado. La Secretaría sugiere que el Gobierno de China, sirviéndose del Banco Mundial, facilite a la 85ª reunión una información adicional sobre las actividades propuestas, sus presupuestos, y un informe sobre la marcha de las actividades de su ejecución. El Comité Ejecutivo puede también estimar oportuno facilitar orientaciones complementarias sobre el 1 millón de $EUA asignados al**

sistema de gestión de SAO en línea y a la creación de capacidad en las Autoridades Aduaneras.

164. **Como ulteriormente se recoge en el documento que trata de la reseña sobre la supervisión y vigilancia del País, la notificación y verificación que se incluye en la Parte I del presente documento, la Secretaría respalda intensamente las medidas propuestas para fortalecer la supervisión y vigilancia de CTC, y comparte el punto de vista de que dicha supervisión y vigilancia es fundamental para asegurar tanto la sostenibilidad de la eliminación de los usos controlados de CTC como de la producción de los CFC. Partiendo de la información adicional facilitada por el Gobierno de China, las instalaciones de producción ilegal de CFC descubiertas recientemente hacen uso de la ruta común de producción, es decir, fluoración en estado líquido de CTC y ácido fluorhídrico en presencia de cloruro de antimonio; esas instalaciones consiguieron comprar CTC para usar como materia prima, de lo que se desprende la necesidad de reforzar los mecanismo de supervisión y vigilancia de los CTC. La Secretaría considera que las medidas que se proponen seran útiles a este respecto. No obstante, la Secretaría no tiene claro las razones por las que las instalaciones de PCE no se han incluido en los esfuerzos de supervisión y vigilancia desplegados por el Gobierno de China.**

Eliminación de la producción de CFC

165. **En la 82ª reunión,** El Gobierno indicó que, tal y como se ha encontrado en resultados recientes de la vigilancia atmosférica, parece desprenderse que hay un cierto grado de producción y emisión de CFC, especialmente de CFC-11. A medida que se van desmantelando todas las instalaciones de CFC como parte del Plan del sector de eliminación de CFC y el **IECO** haya visitado a todos los antiguos productores de CFC y comprobado que ninguno de ellos había reiniciado la producción de CFC, toda otra producción de CFC habría de venir de instalaciones de producción ilegal establecidas sin permiso. La Secretaría toma nota de que las verificaciones presentadas en consonancia con la producción del plan sectorial de eliminación de CFC, incluidas fotografías y evidencias de video por las que se demuestran que el equipo clave se ha destruido o ha quedado inutilizado.

166. A efectos de identificar toda producción ilegal de CFC, la vigilancia de la producción de CTC quedará fortalecida como se indicó en el marco del proyecto PA. Además, el **IECO** propone expandir el programa de supervisión atmosférica en algunas provincias en la que pudiera haber producción ilegal.

167. La producción de CFC requiere CTC y ácido fluorhídrico. Al tomar nota de que la vigilancia del uso del ácido fluorhídrico sería difícil, la Secretaría considera que el fortalecimiento de la supervisión y vigilancia de la producción de CTC será un avance clave para impedir la futura producción ilegal de CFC. De igual forma, la Secretaría considera que la propuesta para ampliar el programa provincial de supervisión y vigilancia atmosférica sería de gran valía a la hora de detectar e impedir la futura producción ilegal de CFC. La Secretaría preguntó si el actual programa provincial de supervisión y vigilancia atmosférica ya incluye instrumentos para observar a los CFC y a los CTC, y cómo habría de ampliarse. **El análisis de los sistemas actuales de supervisión y vigilancia, notificación, verificación y observancia (decisiones 82/65 y 82/71 a)) presentado por el Gobierno de China aporta una información adicional sobre la red de supervisión y vigilancia atmosférica del país, y de sus planes para ampliarla para asegurar la sostenibilidad de la eliminación de las SAO. Además, dicho documento realza las medidas adicionales que podrían emplearse para fortalecer la supervisión y vigilancia de las instalaciones para producir productos químicos que no fueran SAO.**

Sector de producción de espumas de PU

168. El Gobierno indicó que mientras se asumía que los CFC-11 habían sido eliminados, hoy día sabemos que una cierta cantidad de CFC quizás se esté produciendo ilegalmente y utilizándose como agente espumante en el sector de producción de espumas de PU. La capacidad de inspección de los **Burós BPMA** ha sido fortalecida con objeto de vigilar qué tipo de agentes espumantes se utilizan y para identificar el uso

potencialmente ilegal de los CFC-11 en el sector de producción de espumas de PU. Sin embargo, sigue necesitándose de la creciente supervisión y vigilancia de los fabricantes de espumas de PU y de la de los proveedores de sistemas de producción de espumas. Así pues, el Gobierno es de la opinión de que es necesario continuar el programa de supervisión y vigilancia más allá de 2018 hasta que la financiación de China se haya agotado plenamente.

169. Además, aunque existe una amplia supervisión y vigilancia en curso de las empresas de espumas que se convirtieron, abandonando el consumo de CFC-11, incluyendo el muestreo de espumas para analizar el contenido de los agentes de espumación, el Gobierno reconoce que ello significaría que existe una deficiencia en la supervisión y vigilancia del CFC-11 si todas las aplicaciones no se abordaran más allá de la producción de espumas. Por consiguiente, China y los organismos de ejecución tienen previsto coordinar la supervisión y vigilancia entre los sectores.

170. La Secretaría hizo hincapié en que es necesario asegurar la eliminación sostenida del CFC-11, incluso tras acabarse la financiación en el marco del plan para el sector de espumas de PU y tomó nota de que se habían visitado 420 empresas productoras de espumas y proveedores de sistemas en cinco provincias, y de haberse recogido más de 780 muestras de materia prima para su análisis. En lo tocante al pequeño porcentaje de muestras sospechosas de contener CFC-HCFC, la Secretaría preguntó si el análisis efectuado por los laboratorios certificados confirmó el uso de CFC y, de ser así, en qué proporción y qué reglas y reglamentos reguladores serían aplicables a las empresas que los consuman.

171. El Gobierno informó de que las empresas que tienen muestras que contienen CFC-HCFC están siendo investigadas y que, por lo tanto, quedan bajo el mandato del **Buró BPMA** y de la entidad de Seguridad Pública (policía local). Se prevé que los resultados se publiquen en el ámbito público a finales de octubre. **El informe actualizado indicó que se habían detectado tres empresas en Shandong empleando ilegalmente CFC-11, que se les sometió a una penalización de conformidad con las regulaciones y que los casos habían sido cerrados. El Gobierno aclaró que esto formaba parte de las actividades de supervisión y vigilancia provinciales. Los diez casos notificados en el informe de supervisión, vigilancia y evaluación son el resultado de la campaña especial de implantación efectuada en 2018.**

172. Al respecto de las reglas y reglamentos pertinentes que serían de aplicación a las empresas que consuman SAO prohibidas, el Gobierno indicó que hasta la fecha, se han detectado tres empresas que consumían ilegalmente CFC-11, y que han sido penalizadas conforme a lo estipulado en el reglamento regulador de la gestión de substancias SAO.

173. La Secretaría toma nota de que una empresa que consuma HCFC-141b, tras comprometerse a su eliminación, puede quedar sujeta a una penalización conforme a los reglamentos locales. No obstante, en el caso del CFC-11, habría que determinar si el origen se deriva de existencias, gas reciclado de previos usos (por ejemplo, enfriadores) o de una producción posterior a la fecha tope de la eliminación total, lo que potencialmente podría acarrear una penalización por incumplimiento del Acuerdo firmado para la producción de CFC y quizás del Acuerdo relativo al consumo de CFC. Esto exigiría un análisis ulterior.

Sector de disolventes

174. En lo tocante al plan sectorial de disolventes, el Gobierno indicó que a efectos de fortalecer ulteriormente la supervisión y vigilancia sostenibles, a largo plazo, de la eliminación en dicho sector, el **IECO** apoyó a los **Burós BPMA** para vigilar las actividades conexas a las SAO y controlar la producción y usos ilegales de dichas SAO en su provincia. Además, algunos de los **Burós BPMA** habían establecido un mecanismo de largo plazo al emitir políticas-normativas de gestión de SAO y requisitos de evaluación de efectividad para funcionarios de gestión de SAO. Al apoyar también el desarrollo de técnicas de ejecución para el sector de disolventes, se ha capacitado a varios peritos para aportar apoyo efectivo a largo plazo a efecto de la supervisión y vigilancia sostenible y a largo plazo de la eliminación. La Secretaría tomó

nota de que esas actividades fueron valiosas pero que seguía sin estar claro cómo estas acciones, específicamente la última, ayudarían a asegurar la supervisión y vigilancia sostenibles del sector a largo plazo.

Sector de servicio y mantenimiento

175. El Gobierno indicó que los proyectos de asistencia técnica para investigar las fugas en el sector de servicio y mantenimiento y el estudio de los datos están muy interrelacionados con la implantación del plan de gestión de eliminación de los HCFC. La investigación sobre las fugas de refrigerante durante el funcionamiento y durante las tareas de servicio y mantenimiento de los equipos de refrigeración y climatización con R-290 forma parte de la investigación sobre las alternativas. El estudio de los datos en el subsector de supermercados está conectado con el fomento de las prácticas idóneas de servicio y mantenimiento en dicho subsector. La Secretaría tomó nota de que dichas actividades fueron valiosas pero no tenían relación alguna con la supervisión y vigilancia sostenible y del sector a largo plazo.

Sector de halones

176. La situación en que se encuentra el sector de los halones es algo diferente a la de otros, al haber una demanda continua de halon-1211 y de halon-1301 para algunos usos para los que no hay alternativas. Esas aplicaciones, supuestamente, se cubren con los halones recuperados y reciclados hasta disponer de otras alternativas. El programa de reciclado de halones fue un elemento esencial en plan del sector de halones. El plan para el sector de halones de China incluye también los bancos de halones como componente clave. La implantación del componente de bancos de halones se ha demorado, como ya se ha notificado.

177. El Gobierno considera que el riesgo de producción ilegal de halon-1211 es muy bajo, dadas las ingentes existencias de halon-1211 producido antes de ejecutarse la eliminación total y ante lo reducido de la demanda anual que es de 20 a 30 Tm/año. Las existencias remanentes de halon-1211 se encuentran todas ellas en las instalaciones de un antiguo productor de halon-1211. El Gobierno de China propone que se mueva todo o una parte de forma que pueda almacenarse en condiciones seguras y controladas, o que se destruya/convierta parcialmente. China considera que es importante evitar la emisión de más de 2 200 Tm de halon-1211.

178. Por el contrario, el halon-1301 se sigue produciendo sola y exclusivamente para usos de materia prima; este halon-1301 recientemente producido no se añade a las existencias actuales, sino que se emplea exclusivamente como una materia prima. El Gobierno asume que la demanda de halon-1301 para usos controlados la cubren las existencias actuales, y que el halon-1301 se recupera de las instalaciones de lucha contra incendios que se han desmantelado y regenerado para aplicaciones para las que aún no existen alternativas. Sigue habiendo una continua demanda de halon-1301 para los actuales sistemas de extintores en los que no pueden emplearse otras alternativas por razones de seguridad, y para aviación civil, donde no se dispone aún de alternativas para dotar a los sistemas de lucha contra incendios de ciertos aviones. La aviación civil se expande mundialmente, especialmente en China, llegando a ser de más del 10 por ciento el crecimiento anual previsto durante los próximos 5 a 10 años.

179. Hay dos cuestiones relacionadas con el halon-1301. Primeramente, hay un productor de halon-301 que sigue produciéndolo[39] para fines de materias primas y que se vende a ocho productores de fipronil (un pesticida). Así pues, es fundamental asegurarse de que se vende todo nuevo halón que se produzca a esas ocho empresas y de que realmente se emplean como materia prima para fabricar fipronil y no para venderlo para otros usos. El segundo escollo es el de asegurar el suficiente suministro de halon-1301 al resto de los usuarios para los que no hay otras alternativas, especialmente en el caso de la aviación civil. El Gobierno considera que para no tener que producir para usos esenciales, está claro que a día de hoy, la demanda solo

[39] Como se recoge en el documento UNEP/OzL.Pro/ExCom/82/SGP/03, el HFC-23 se usa como materia prima en la producción de halon-1301.

puede satisfacerse con halon-1301 recuperado del mercado. Por ende, es fundamental seguir con el programa de reciclaje de halon-1301 con objeto de asegurar el suministro de halón 1013 y evitar el riesgo de que se produzca ilegalmente.

180. La Secretaría conviene en que el programa de reciclado de halones constituye un elemento valioso a la hora de asegurar el suministro ininterrumpido de halon-1301. No obstante, la Secretaría no tenía claro cómo iba el Gobierno de China a asegurar a largo plazo la supervisión y vigilancia sostenibles de la eliminación de halones tras terminarse el proyecto.

Cuestiones financieras en subsectores específicos

181. En lo tocante al plan sectorial de producción de CFC, la Secretaría tomó nota de que se había firmado un contrato por valor de 112 153 $EUA para producir un video sobre conocimientos básicos de las SAO, avances en la implantación del Protocolo de Montreal y la necesaria pericia de ejecución que requieren los funcionarios y los corredores de SAO. Al explicar cómo esta actividad se relaciona con el sector de producción de CFC y cómo servirá para mejorar la supervisión vigilancia sostenible de la eliminación, el Gobierno indicó que el departamento de aduanas usará la serie de libros de texto en formato de video durante la gestión de capacitación de las importaciones y exportaciones de SAO a efectos de mejorar la capacidad de supervisión del personal aduanero, y de mejorar los conocimientos en el desempeño de los funcionarios de aduanas en el campo. Así mismo, servirá para capacitar a las empresas activas en la importación y exportación de SAO con objeto de cumplir con las prescripciones de gestión de dichas SAO, y mejorar la capacitación del sector en lo tocante a las pericias y el nivel de gestión y a la concienciación de tener que cumplir con todo lo relativo a las SAO.

182. En lo concerniente a los agentes de proceso II, en agosto de 2018 se firmaron contratos por valor de 4,6 millones de $EUA con nueve empresas para la construcción de tres incineradores, la mejora de los dos vigentes, la construcción de dos aparatos de reducción de residuos, y el subsidio de los costos de explotación en dos casos. Dado que las empresas recibirán un primer plazo, que representa el 80 por ciento del valor del contrato a finales de 2018, la Secretaría pidió que se aclarara el hito que las empresas tienen que alcanzar antes de recibir finanza alguna y preguntó si en este caso se trataba de un proyecto retroactivo. El Gobierno explicó que se trata de dos proyectos con inversión a terminar en 2019 (sin carácter retroactivo) y que el hito que marca el primer pago es el haber culminado la mejora o establecimiento de las instalaciones de eliminación. Las empresas participantes tienen que sufragar la mayor parte del costo de establecer o mejorar las instalaciones, aportando **IECO** tan solo una pequeña parte de las finanzas, a efectos de fomentar la eliminación interna de los residuos de CTC. Este proyecto está dirigido a fomentar que los productores de CTC eliminen sus residuos de CTC internos, en vez de enviarlos a otros centros de eliminación o incluso a venderlos para que vuelvan a utilizarse. La Secretaría tomó nota de que dicha venta se consideraría consumo.

Informes de investigación y de asistencia

183. En lo tocante a las repercusiones de la asistencia técnica que se facilita junto a estos saldos respecto de la ejecución de los planes sectoriales de gestión de eliminación de los HCFC, del plan de gestión de eliminación del consumo en el sector de producción de HCFC, y de la eliminación de los HCFC, el Gobierno afirmó que la asistencia técnica es necesaria en los sectores de producción de espumas PU de CFC y de producción de CFC, a efectos de asegurar que los fabricantes que utilicen alternativas y los productores de tales alternativas a los CFC continúen disponiendo de las mejores opciones técnicas que puedan obtenerse a medida que el mercado va evolucionando. Como caso concreto, el objetivo es impedir que esas empresas que hayan elegido alternativas a las SAO se pasen por defecto a los HCFC si han experimentado dificultades con otras alternativas.

184. Durante los últimos cuatro años, el plan sectorial de disolventes apoyó la investigación y una diversidad de estudios, incluyendo la investigación y desarrollo de alternativas sin PAO y de bajo PCA.

Las empresas productoras de disolventes han elegido dos nuevas alternativas (disolvente con HC, y aceite de silicona sin disolvente) con objeto de reemplazar al HCFC-141b mientras se implanta la eliminación, y encontrándose otras tres alternativas en la fase de elaboración de una certificación autorizada conexa para más aplicaciones. El objetivo de esta investigación y estos estudios es el de aportar soluciones técnicas sostenibles al sector, e intentar impedir que utilicen HCFC cuando se encuentren con dificultadas técnicas.

185. El informe sobre la marcha de las actividades del sector de espumas de PU incluyó resúmenes interesantes de los estudios ya terminados, en su mayor parte del desempeño de las alternativas. Habida cuenta de que los estudios se han llevado a cabo con la asistencia del Fondo Multilateral, la Secretaría pidió los informes completos de las actividades de investigación en todos los sectores a fin de considerar cómo podrían difundirse. El **IECO** tomó nota de una petición de la Secretaría para que se presentaran los informes pertinentes, e indicó que se comunicaría con las instituciones para confirmar si existe información confidencial que no pueda difundirse. **Varios de estos informes ya han sido compartidos con la Secretaría del Fondo, mientras que otros están aún por finalizar**.

Recomendaciones de la Secretaría

186. El Comité Ejecutivo puede estimar oportuno:

a) Tomar nota:

i) De los informes de auditoría financiera **y las actualizaciones atinentes** a los sectores de producción de CFC, halones, espuma de poliuretano (PU), agentes de procesos II, disolventes y servicio y mantenimiento de China que se recogen en el documento China, se recogen en el documento UNEP/OzL.Pro/ExCom/**83/11/Add.1**;

ii) De los saldos remanentes de la financiación conexos a cada uno de los planes sectoriales que no se hayan desembolsado totalmente **para abril de 2019**;

iii) De que el Gobierno de China ha confirmado que los planes sectoriales atinentes a espumas de PU, producción de CFC, disolventes y servicio y mantenimiento se terminarán y de que los saldos conexos se desembolsarán e**n 2019**;

b) Convenir la ampliación del plan sectorial de agentes de proceso II y de halones para 2020 y 2022, respectivamente;

c) Pedir al Gobierno de China que, sirviéndose del organismo de ejecución pertinente:

i) Presente a la primera reunión de 2020 el informe de auditoría financiera cual el de diciembre de 2019 al respecto de los sectores de producción de CFC, halones, agentes de proceso II, espumas de PU, disolventes y servicio y mantenimiento de equipos de refrigeración con CFC, y los informes de terminación de proyectos relativos a los sectores de producción de CFC, espumas de PU, disolventes y servicio y mantenimiento;

ii) Reembolse al Fondo Multilateral, en la primera reunión de 2020 todo saldo de financiación conexo a los sectores de producción de CFC, espumas de PU disolventes y servicio y mantenimiento;

iii) Notifique los resultados de los Burós BPMA al respecto de los esfuerzos de supervisión y vigilancia, en los futuros informes de auditoría financiera, incluyendo los casos en los que se hubiera detectado la presencia de CFC-11,

y que, una vez se hayan desembolsado todos los saldos remanentes de los proyectos que se hubieran incluido en la auditoría financiera y aquellos otros que hubieran sido ya terminados, continúe la susodicha notificación en el ámbito de los informes anuales sobre la marcha de las actividades atinentes al plan sectorial de espumas de PU y del plan de gestión de eliminación de los HCFC; y

iv) Presentar los informes **remanentes** de asistencia técnica y de investigación terminados que se hubieren acometido en todos los sectores, con miras a la posible difusión a otros países que operan al amparo del artículo 5;

d) Pedir al Gobierno de China, a través del Banco Mundial, que facilite a la 85ª reunión información adicional sobre las actividades propuestas para ser acometidas en el ámbito del plan sectorial del agento de proceso II, sus presupuestos, y un informe sobre la marcha de las actividades de ejecución; y

e) Pedir al Banco Mundial que presente una traducción al inglés del estudio de la producción de CTC en China, así como de su empleo en aplicaciones como materia prima, presentado de conformidad con la decisión 75/18 a la mayor brevedad posible, de manera que puede presentarse a la 85ª reunión.

PARTE IV: PLAN SECTORIAL PARA LA ELIMINACIÓN DEL CONSUMO DE BROMURO DE METILO (ONUDI)

China: Fase II del plan nacional de eliminación del consumo de bromuro de metilo – Informe final (ONUDI)

187. En la 82ª reunión, el Comité Ejecutivo sopesó el proyecto de eliminación del consumo de bromuro de metilo en China y pidió al Gobierno de China y a la ONUDI que presentaran el informe final a la 83ª reunión (decisión 82/18 c)).

188. De conformidad con la decisión 82/18 c), y en nombre del Gobierno de China, la ONUDI presentó el informe final correspondiente a la fase II del plan de eliminación del consumo de bromuro de metilo, del que se derivó la eliminación de 698,8 toneladas PAO de bromuro de metilo, lo que representa el consumo remanente en el sector de producción de tabaco y el consumo total en el sector agrícola. Con anterioridad, de la fase I del proyecto se derivó una eliminación de 389 toneladas PAO de bromuro de metilo en el sector de productos básicos y parte del consumo en el sector de producción de tabaco.

189. De 2015 a 2018, China solicitó exenciones para usos críticos destinadas a la protección del jengibre en la provincia de Shandong. Las Partes en el Protocolo de Montreal autorizaron las exenciones para usos críticos como sigue, a saber: 114 Tm (68,4 toneladas PAO) para 2015,[40] 99,75 Tm (59,85 toneladas PAO) para 2016,[41] 92,977 Tm (55,79 toneladas PAO) para 2017,[42] y 87,24 Tm (52,34 toneladas PAO) para 2018.[43] China notificó para 2015-2017 el consumo de bromuro de metilo en virtud del artículo 7 del Protocolo de Montreal por una cifra inferior al monto autorizado para tales exenciones, y notificó el consumo de bromuro de metilo atinente a tal exención para 2018.[44]

190. El plan de trabajo para la eliminación del consumo de bromuro de metilo correspondiente a las exenciones arriba indicadas incluye los siguientes componentes, a saber: gestión del bromuro de metilo aplicable a las exenciones para usos críticos; optimización de sistemas de desinfección de terrenos; y establecimiento de un sistema sostenible de gestión del desempeño.

191. El Departamento de Agricultura de la provincia de Shandong elaboró los reglamentos reguladores con miras al consumo del bromuro de metilo para usos críticos, y en el marco de esa regulación, el Centro de energía rural y de protección del medio ambiente agrícola de Shandong desarrolló un plan de gestión del rastreo o seguimiento para asegurar que el consumo de bromuro de metilo no superara el volumen correspondiente a las exenciones durante esos años. Se preparó cada año un informe de supervisión y vigilancia al respecto de los usos críticos del bromuro de metilo, confirmando que las asignaciones de bromuro de metilo para tales exenciones se prepararon anualmente, lo que así confirmaba que las asignaciones para la exenciones para campos abiertos y el cultivo protegido de jengibre se rastrearan y emplearan tan solo en zonas elevados regímenes de fitoenfermedades de transmisión por el terreno.

192. De 2016 a 2018, el proyecto se centró en la demostración y evaluación integrada de los resultados de la tecnología de desinfección de terrenos, formulación de normas técnicas, aplicación y fomento de tecnologías de desinfección de terrenos y en intercambio de tecnologías. El Instituto de Protección Fitosanitaria de la Academia China de Ciencias Agrícolas (IPP-CAAS), terminó la evaluación de la tecnología de desinfección de terrenos para el cultivo de jengibre, fresa, tomate y boniato/batata.

193. En lo tocante a las cosechas principales (es decir, jengibre, fresa y tomate) se establecieron métodos de detección rápida de patógenos de transmisión por el terreno; se desarrollaron sistemas de servicio especializados para la fumigación de terrenos con productos químicos para que los aplicara el pequeño

[40] Decisión XXVI/6
[41] Decisión XXVII/3
[42] Decisión XXVIII/7
[43] Decisión XXIX/6
[44] Partiendo del informe final presentado para el proyecto.

agricultor; y se desarrollaron también métodos de aplicación mediante cápsulas, rociados por inyección, irrigación por goteo y rociado de pesticidas. Se adoptaron tecnologías alternativas tales como cloropicrina, dazomet, sodio de metilditiocarbamato y disulfuro de dimetilo, para el cultivo del ginseng y las plantaciones de boniato/batata. Se aportó la capacitación en estas tecnologías, se efectuaron visitas de campo para departamentos agrícolas, técnicos y agricultores. Se capacitó a más de 2 400 agricultores y se formó a 700 participantes procedentes de departamentos agrícolas locales entre 2016 y 2018 en labores de identificación de identificación de plagas en las cosechas, gestión integrada de plagas, tecnologías para desinfección de terrenos y sistemas de servicio para fumigación de terrenos.

194. La creación de capacidad incluyó la contratación de tres personas a tiempo completo: un oficial de proyecto, un auxiliar de proyecto y un oficial de información. Se contrataron también asesores para registros de fumigación de terrenos, tecnología de fumigación de terrenos, desarrollo de políticas-normativas y fomento de proyectos.

195. Se publicaron informes técnicos sobre tecnología de desinfección de terrenos y un folleto de proyecto; se radiodifundieron nuevas presentaciones de los logros alcanzados en los proyectos y un documental sobre la desinfección de terrenos; se impartieron también talleres sobre tecnologías y gestión de la eliminación del bromuro de metilo en el ámbito de la agricultura.

196. El Ministerio de Agricultura anunció que la prohibición sobre el uso del bromuro de metilo en el sector agrícola entraría en vigor el 1 de enero de 2019.

Informe financiero

197. Se aprobó un volumen total de 14 789 342 $EUA para el proyecto de eliminación de bromuro de metilo en China, el cual se componía de 7 185 958 $EUA para la fase I y de 7 603 384 $EUA para la fase II. Del monto total se han desembolsado 14 789 342 $EUA, es decir, el 100 por ciento).

Observaciones de la Secretaría

198. La Secretaría tomó nota de que el Gobierno de China continúa controlando el uso del bromuro de metilo en el país, y que su consumo se ha atenido a las cantidades aprobadas para las exenciones por usos críticos. Se tomó nota también de que como consecuencia de la implantación del plan nacional de eliminación del consumo de bromuro de metilo, con entrada en vigor el 1 de enero de 2019, está prohibido el uso de bromuro de metilo en la agricultura, salvo para aplicaciones de cuarentena y usos previos al embarque (QPS).

199. El Comité Ejecutivo puede estimar oportuno tomar nota de que China notificó un consumo cero de bromuro de metilo para 2018, salvo para las exenciones para uso críticos aprobadas por las Partes en el Protocolo de Montreal, como se indicó en el informe final. China no ha presentado aún los datos de consumo de SAO en virtud del artículo 7 del Protocolo de Montreal. Además, China no solicitó ser nominada para exenciones por uso críticos de bromuro de metilo para 2019.

200. El Gobierno se ha comprometido con la eliminación de bromuro de metilo alcanzada en el proyecto, prohibiendo así el uso de esta substancia en el sector agrícola y no solicitando ser nominada para uso críticos de bromuro de metilo.

Recomendaciones de la Secretaría

201. El Comité Ejecutivo puede estimar oportuno:

a) Tomar nota:

i) Del informe final sobre la ejecución de la fase II del plan nacional para la eliminación del bromuro de metilo en China, presentado por la ONUDI, y que se recoge en el documento UNEP/OzL.Pro/ExCom/83/11/Add.1;

ii) De que no se ha notificado consumo alguno de bromuro de metilo en China durante 2018, salvo por las exenciones por usos críticos aprobadas por las Partes en el Protocolo de Montreal;

b) Pedir al Gobierno de China y a la ONUDI:

i) Que incluyan en el informe de verificación de la producción de bromuro de metilo para 2018, prescrito por la decisión 82/19 e), los volúmenes empleados en el consumo de bromuro de metilo; y

ii) Que presenten el informe de terminación de proyecto a la 84ª reunión, a lo más tardar, de conformidad con la decisión 82/18 c).

PARTE V: PLAN SECTORIAL PARA LA ELIMINACIÓN DE LA PRODUCCIÓN DE BROMURO DE METILO (ONUDI)

202. La ONUDI, en nombre del Gobierno de China, presentó a la 82ª reunión, un informe sobre la marcha de las actividades de ejecución del plan sectorial para la eliminación de la producción de bromuro de metilo, y el informe de verificación 2017 de la producción y uso controlado, de conformidad con la decisión 73/56 b). Tras mantener una deliberación, el Comité Ejecutivo decidió, entre otras cosas, prorrogar la fecha de terminación del plan para el sector de producción de bromuro de metilo hasta el 31 de diciembre de 2021, y pidió al Gobierno de China, sirviéndose de la ONUDI, que presentara a la 83ª reunión un informe sobre la marcha de las actividades al respecto del contrato para el desarrollo del sistema de información para gestión y su incorporación a su programa de supervisión y vigilancia que implantarán sus Autoridades de Aduanas, así como una actualización del plan de trabajo para asegurar la supervisión y vigilancia sostenida y a largo plazo del bromuro de metilo una vez terminado el plan de eliminación del sector de producción de dicho bromuro de metilo, incluyendo en ello la elaboración los arreglos institucionales y de políticas-normativas por los que se demuestre el cumplimiento, la supervisión, vigilancia y observancia (decisión 82/19 c) y d)).

203. En nombre del Gobierno de China, la ONUDI presentó a la 83ª reunión el informe sobre la marcha de las actividades y una actualización del plan de trabajo conforme a lo pedido.

Informe sobre la marcha de las actividades respecto del contrato con las Autoridades de Aduanas

204. Puesto que la Administración general de supervisión de calidad, inspección y cuarentena ha sido incorporada al ámbito de las Autoridades de Aduanas, el Centro Internacional para el Medio Ambiente (IECO) el Ministerio de Ecología y Medio Ambiente (MEE), dichas Autoridades de Aduanas se encuentran negociando un nuevo memorando para definir las actividades a efectuar durante el periodo de 2019 a 2021. Una vez finalizado dicho memorando, el IECO firmará un contrato para efectuar las actividades.

Plan de implantación para 2019–2021

205. El plan de trabajo consta de actividades a corto plazo que se centran en la supervisión y vigilancia de la producción de bromuro de metilo de 2019 a 2021, y actividades destinadas a asegurar el cumplimiento a largo plazo, estableciendo e implantando para ello la efectiva supervisión y vigilancia de los programas y herramientas atinentes al bromuro de metilo.

206. En lo tocante a la primera implantación a corto plazo, el IECO acometerá tres actividades auxiliares:

a) Fortalecer la recogida de datos de los productores de bromuro de metilo, mejorando para ello los impresos/formularios y auxiliando a los productores a presentarlos trimestralmente debidamente rellenados;

b) Fortalecer la recogida de datos sobre materias primas y el análisis mediante la continua supervisión y vigilancia del uso del bromuro de metilo como materia prima y evaluando y realizando comprobaciones cruzadas de tales datos con los datos actuales e históricos; y

c) Contratar peritos independientes para realizar las verificaciones anuales de la producción de bromuro de metilo durante 2019-2021; no se prevé efectuar verificaciones independientes tras 2021.

207. Puesto que la producción de bromuro de metilo continuará para emplearse como materia prima y usos de cuarentena y usos previos al embarque (QPS) tras terminarse el proyecto, se emprenderán las siguientes actividades para asegurar la gestión, supervisión y vigilancia a largo plazo:

a) Implantar un sistema de etiquetas y rastreo de bromuro de metilo que se fundamente en las necesidades de los tres productores de bromuro de metilo y de las sugerencias de los usuarios de materias primas y para QPS;

b) Acometer dos estudios sobre los usos del bromuro de metilo como materia prima (abarcando los periodos de 2017-2018 y 2019-2020, respectivamente) con objeto de realizar una comprobación cruzada de los datos de producción y del uso notificado como materia prima, y para desarrollar una base de datos sobre los usos del bromuro de metilo como materia prima. Los estudios se centrarán en las provincias de Jiangsu, Shandong, Shanghai, y Zhejiang, donde se concentran los usos del bromuro de metilo como materia prima. A partir de 2021, el sistema de información para gestión de SAO (SAO-MIS) ya estará en vigor y funcionando y los usos del bromuro de metilo como materia prima se incorporarán a dicho sistema SAO-MIS, y los datos se actualizarán regularmente. A día de hoy, los usuarios del bromuro de metilo como materia prima tienen que registrarse en el MEE, y los productores del bromuro de metilo solo pueden venderlo a los usuarios que estén así registrados; sin embargo, si bien el IECO efectúa inspecciones periódicas de usuarios seleccionados, los usuarios de bromuro de metilo como materia prima no notifican al MEE sus usos del bromuro de metilo como materia prima. Una vez esté funcionando el sistema SAO-MIS, los usuarios del bromuro de metilo como materia prima presentarán sus datos de consumo al MEE sirviéndose de la plataforma SAO-MIS, y los Burós BPMA podrán acceder al SAO-MIS, complementando así las tareas de supervisión y vigilancia del MEE;

c) Fortalecer los mecanismos para supervisar la producción, uso y gestión del bromuro de metilo para QPS sirviéndose de la cooperación entre el MEE y las Autoridades de Aduanas. Partiendo del sistema de etiquetas y rastreo del bromuro de metilo, el bromuro de metilo que se produzca para QPS quedará registrado y rastreado desde su producción hasta el uso, facilitando información al sistema de supervisión de tratamiento por cuarentena a fin de recoger datos y respaldar el análisis estadístico; fortaleciendo la supervisión y vigilancia existente de la concentración del bromuro de metilo durante las fumigaciones de QPS y facilitando datos (incluidos la concentración y dosificación del bromuro de metilo) al sistema de tratamiento por cuarentena; estableciendo un mecanismo de coordinación con las empresas de fumigación con bromuro de metilo para fomentar los protocolos diseñados para reducir las emisiones de bromuro de metilo por la fumigación QPS; promoviendo el incremento del grado de concienciación sobre el bromuro de metilo para QPS mediante reuniones, capacitación y visitas de campo; y actualización de la publicación “Animal and plant quarantine treatment principle and application of technology” con objeto de reflejar las prácticas idóneas. El material de referencia continuará actualizándose para reflejar las nuevas tecnologías y recomendaciones, y las Autoridades de Aduanas continuarán organizando la impartición de la necesaria capacitación de funcionarios de aduanas y de los Burós BPMA, según se necesite, una vez se haya terminado el proyecto;

d) Actividades de capacitación y de incremento del grado de concienciación para las partes interesadas en las políticas-normativas en los planos nacional e internacional al respecto de la producción, consumo y eliminación del bromuro de metilo; y de talleres de capacitación para las partes interesadas en el bromuro de metilo enfocadas a los funcionarios de aduanas y a los Burós BPMA con objeto de fortalecer su capacidad e implantar sus funciones de gestión y de supervisión y vigilancia; y

e) Establecer un equipo de peritos formado de expertos nacionales para ayudar en la implantación del plan de trabajo, incluyendo la asistencia en las obligaciones de supervisión, vigilancia y evaluación, formulando o evaluando las estrategias y planes de ejecución, formulando especificaciones técnicas, realizando evaluaciones técnicas para la

adquisición de equipos y servicios, y recomendando políticas-normativas y regulaciones sobre los sectores de consumo y producción del bromuro de metilo.

208. El presupuesto para el plan de trabajo de 2019-2021 se recoge en el Cuadro 3.

Cuadro 3. Presupuesto de 2019-2021 para el sector de producción de bromuro de metilo en China ($EUA)

Actividades	Presupuesto($EUA)
Verificación de los productores de bromuro de metilo durante el periodo 2018-2021	25 000
Gestión del registro de usos del bromuro de metilo como materia prima	8 000
Estudio de los usos del bromuro de metilo como materia prima (centrado en Jiangsu, Shandong, Shanghai y Zhejiang)	90 000
Sistema de rastreo y gestión de etiquetaje de productos con bromuro de metilo	120 000
Programa de supervisión y vigilancia (Autoridades de Aduanas): -Capacidad de rastreo registrando el uso para cuarentena y usos previos al embarque -Mejor uso de las actuales herramientas de supervisión y vigilancia -Rastreo y fumigación mejorados para cuarentena y usos previos al embarque -Actividades para incrementar el grado de concienciación -Actualización de los materiales actuales de referencia	350 000
Recogida de datos y evaluación durante el periodo 2019-2021	12 000
Talleres de capacitación e incremento del grado de concienciación para partes interesadas	20 000
Equipo de peritos para servicios de asesoría y de asistencia técnica	7 104
Total	**632 104**

209. Dado que la producción de bromuro de metilo para uso como materia prima y para cuarentena y usos previos al embarque continuará tras la terminación del proyecto, el IECO confirmó que tras el 31 de diciembre de 2021 continuarán también las actividades siguientes, a saber:

a) Los productores de bromuro de metilo habrán de continuar presentando al IECO trimestralmente los datos de producción y de ventas, y el IECO habrá de continuar analizando dichos datos y los documentos de apoyo pertinentes, incluyendo los registros cronológicos de almacén, de materias brutas, de producción en lotes, etc.;

b) IECO habrá de continuar analizando las aplicaciones como materia prima, incluyendo la verificación de los documentos de apoyo necesarios, y habrá de continuar analizando la base de datos de las empresas que consuman bromuro de metilo para usos de materia prima, habiendo también de efectuar una comprobación cruzada de la información a fin de asegurarse de que el bromuro de metilo no se utiliza para usos controlados;[45]

c) Los productores de bromuro de metilo habrán de continuar firmando contratos de ventas con los usuarios de dicho producto y especificar el volumen y la finalidad a la que se destinará el bromuro de metilo vendido. Los productores de bromuro de metilo no pueden vender bromuro de metilo a individuos;

d) Los productores de bromuro de metilo contabilizarán sus ventas para usos de QPS tan solo una vez hayan recibido la licencia de fumigación para QPS expedida por la autoridad pertinente. En lo tocante a la importación y exportación de mercancías que se hayan sometido a fumigación por QPS, se expedirán certificados que demuestren que tales

[45] Por ejemplo, de enero de 2017 a diciembre de 2018, el IECO recibió y auditó 90 solicitudes para usos del bromuro de metilo como materia prima, todas relativas a aplicaciones médicas, químicas, pesticidas, productos químicos de alta calidad y fiabilidad, ingeniería y biología, y llevó a cabo verificación periódicas *in situ* de aquellos usuarios, con objeto de asegurar que la aplicación era la correcta y que la necesidad de utilizar el bromuro de metilo como materia prima seguía existiendo.

mercancías han sido fumigadas conforme a las normas y prescripciones pertinentes al caso a beneficio de las empresas de importación y exportación. Al respecto de los usos para QPS en el plano nacional, la fumigación la ejecutará o autorizará una instalación local o nacional, autoridad sanitaria o de protección animal o medioambiental, y los productores de bromuro de metilo obtendrán una certificación que otorgarán las autoridades pertinentes a fin de garantizar la finalidad expresada; y

e) Los productores de bromuro de metilo pueden venderlo tan solo a usuarios cualificados que lo empleen como materia prima, que estén registrados con la autoridad gubernamental apropiada, o para fines de QPS fundamentados en lo antedicho.

Observaciones de la Secretaría

Informe sobre la marcha de las actividades del contrato con las Autoridades de Aduanas

210. El contrato con las Autoridades de Aduanas para desarrollar el sistema de información para gestión y su incorporación al programa de supervisión y vigilancia no se ha firmado aún. Como caso concreto, el IECO y las Autoridades de Aduanas se encuentran negociando un nuevo memorando para definir las actividades a ejecutar, habiéndose de firmar el contrato tras ello solamente. Tras tomar nota de lo limitado del tiempo antes de la terminación del proyecto, la Secretaría sugirió que, sirviéndose de la ONUDI, el Gobierno de China facilite, a la 84ª reunión, una actualización sobre la situación en la que se encuentra el contrato y el nuevo memorando con las Autoridades de Aduanas, dándose por entendido que los fondos asignados (250 000 $EUA, más gastos de apoyo al organismo por valor de 18 750 $EUA para la ONUDI)[46] habrían de reembolsarse al Fondo Multilateral durante dicha reunión de no haberse firmado el contrato para esas fechas. Habida cuenta del lapsus de tiempo que pudiera necesitarse para finalizar los arreglos necesarios, se acordó que, de ser imperativo, y a título excepcional, esto podría efectuarse verbalmente en la propia 84ª reunión, y no siguiendo la habitual fecha límite para proyectos con requisitos específicos de notificación.

Plan de implantación para 2019–2021

211. La Secretaría respalda la propuesta del concepto de crear un sistema de rastreo y etiquetaje del bromuro de metilo, si bien no estaba claro cómo habría de funcionar el sistema, la fecha límite para su creación, y que habría de asignársele un presupuesto en el ámbito del IECO a fin de asegurar que se continúa utilizando y manteniendo una vez terminado el proyecto. La ONUDI aclaró que el sistema se encontraba aún en su fase conceptual, que una vez que el Comité Ejecutivo hubiera aprobado el plan de trabajo, el IECO, tras mantener consultas con los tres productores de bromuro de metilo, el sector de fumigación y los peritos del sector, redactaría un proyecto de mandato sobre cómo quedaría estructurado y cómo funcionaría el sistema, junto con el programa calendario. La sostenibilidad del sistema se asegurará mediante la plataforma SAO-MIS, la cual incluirá un módulo de interface para integrar los datos sobre el bromuro de metilo. La Secretaría sugirió que se incluyera una actualización sobre el sistema de rastreo y etiquetaje del bromuro de metilo en el informe anual sobre la marcha de las actividades presentadas a la 84ª reunión.

212. Partiendo del plan de ejecución para 2019-2021, y del compromiso al que se obligue el Gobierno de China para continuar ejecutando las actividades arriba citadas tras la terminación del proyecto, la Secretaría considera que el plan de trabajo es el correcto para poder asegurar que tiene sentido la supervisión y vigilancia sostenidas del bromuro de metilo, a largo plazo, tras haberse culminado el plan sectorial de eliminación de la producción de bromuro de metilo.

[46] Como se describió ulteriormente en el documento UNEP/OzL.Pro/ExCom/82/20.

Recomendaciones de la Secretaría

213. El Comité Ejecutivo puede estimar oportuno:

a) Tomar nota del informe sobre la marcha de las actividades relativas al contrato con las Autoridades de Aduanas para desarrollar el sistema de información para gestión y a su incorporación al programa de supervisión y vigilancia a implantar por las Autoridades de Aduanas, así como de la actualización del plan de trabajo para asegurar la supervisión y vigilancia sostenida y a largo plazo del bromuro de metilo tras terminarse el plan sectorial de eliminación de la producción de bromuro de metilo presentado por la ONUDI, tal y como se recoge en el documento UNEP/OzL.Pro/ExCom/83/11/Add.1;

b) Pedir al Gobierno de China, sirviéndose de la ONUDI, que facilite una actualización sobre el contrato con las Autoridades de Aduanas para desarrollar el sistema de información para gestión y su incorporación al programa de supervisión y vigilancia que implantarán las Autoridades de Aduanas en la 84ª reunión, dándose por entendido que si el contrato no ha sido firmado el primer día de la reunión, los 250 000 $EUA, más los costos de apoyo al organismo, que ascienden a 18 750 $EUA para la ONUDI, y que son conexos a la actividad en cuestión, habrán de reembolsarse al Fondo Multilateral; y

c) Pedir al Gobierno de China, sirviéndose de la ONUDI, que incluya una actualización sobre el sistema de rastreo y etiquetaje del bromuro de metilo en el informe anual sobre la situación de ejecución del plan sectorial para la eliminación de la producción del bromuro de metilo en China que habrá de presentarse a la 84ª reunión de conformidad con la decisión 82/19.

Review of China's Current Monitoring, Reporting, Verification and Enforcement Systems in accordance with HCFC Consumption and Production Phase-out Management Plan Agreements

Table of Contents

1. Introduction and background

1.1 Introduction

In Decision 82/65 and Decision 82/71, the Executive Committee (ExCom) requested the Government of China, through the relevant implementing agency: i.) to submit, at the 83rd meeting, a review of the current monitoring, reporting, verification and enforcement systems in line with its Agreements with the Executive Committee on the country's HCFC phase-out management plan and HCFC production phase-out management plan, including information on the organizational structure and capacity at the national and local levels that demonstrated how the long-term sustainability of the phase-out of HCFCs in the consumption and production sectors was being ensured and on the efforts to address any illegal trade in those substances; and ii.) further to submit, at the 83rd meeting, a progress report regarding actions taken with a view to strengthening of legislation on ODS and implementation thereof in China.

The objective of this report is to provide the ExCom, in accordance with its relevant decisions, with a comprehensive review of the current mechanism of China's ODS control and phase-out, which includes: i.) information on the compliance framework to the Montreal Protocol in China; ii.) current monitoring, reporting, and verification under China's Stage I and Stage II HCFCs Phase-out Management Plans; iii.) Enforcement review and action plan. This report also provides the basis for the ExCom's consideration to Stage II HPMP tranche request and HPPMP for China at its 83rd meeting.

1.2 Structure of the report

This report consists of five chapters. Chapter 1 introduces general background and objective of this report.

Chapter 2 summarizes the compliance framework to the Montreal Protocol in China, where the ODS management system and relevant laws and regulations are reviewed respectively.

Chapter 3 details the current monitoring, reporting, and verification under China's Stage I and Stage II HCFCs Phase-out Management Plan. Followed by a review on HCFCs phase-out at the national level, detailed MRV under HCFCs production and consumption sector is presented. Efforts to address illegal trade and how the long-term sustainability of the phase-out of HCFCs was being ensured are demonstrated as well at the end of this chapter. This chapter also sums up lessons learned during the implementation.

Chapter 4 reviews the overall situation on ODS enforcement in China where challenges are identified as well. This chapter also outlines the action plan to strengthen legislation and its implementation.

The last chapter assesses the challenges in achieving the compliance targets and urgent need of approving tranches of HPMP and HPPMP.

1.3 The Montreal Protocol and China

China acceded to the Vienna Convention for the Protection of the Ozone Layer in 1989 and the Montreal Protocol on Substances that Depleted the Ozone Layer (hereinafter referred to as the Montreal Protocol) and the London Amendment in 1991 and compiled the China's

Country Program for Ozone Depleting Substances Phase-out (hereinafter referred to as Country Program) for guiding the phase-out activity in 1993. Subsequently, China ratified the Copenhagen Amendment in 2003 and the Montreal Amendment and the Beijing Amendment in 2010. As a responsible country, the Government of China is actively fulfilling the obligations specified under the Montreal Protocol. Under the principle of "common but differentiated responsibilities", China stands ready with the international community to seriously implement the Montreal Protocol as always to protect the ozone layer and address climate change.

With great efforts in the last 30 years, China has achieved the phase-out of five main ODS and completed the first stage of HCFCs phase-out. China completed the phase-out of the production and consumption of CFCs and Halons on July 1st 2007, two and a half year earlier than the phase-out schedule of the Montreal Protocol. Until January 1st 2010, except for essential use, China had completely phased out the production and consumption of CFC, Halon, CTC and TCA (5 year ahead of schedule). Then, China realized the total phased-out of production and consumption of Methyl Bromide in controlled use by January 1st 2015. Subsequently, guided by a series of national strategies and strong political commitment, China has completed the first stage of HCFCs phase-out, having achieved HCFC freeze target at 2013 and 10% reduction target at 2015. During the first stage of HCFCs phase-out, China has phased out 71,000 MT of HCFCs production and 45,000 MT of HCFCs consumption, closed down 88,000 MT production capacities, meeting the targets specified for Stage I HPMP and HPPMP in advance. So far, China has in total phased out over 280,000 MT of ozone depleting substances (ODS), accounting for more than fifty percent of the amount phased out in developing countries. Moreover, for maximize the climate benefit, 76% of the HCFC phase-out projects in Stage I HPMP adopted low GWP alternatives.

1.4 Multilateral Fund and China

As an article 5 country, China advocates the establishment of multilateral funds to provide financial support to developing countries. During 1991-1997, project by project submission and approval has been the predominant modality for funding ODS phase-out. In 1997, China Halon phase-out sector plan was approved at the ExCom's 23rd Meeting, marking the turning point from a project-by-project approach to the performance-based multi-year sector approach. The sector approach was more effective in phasing out ODS than project-by-project approach by combing the policy and regulation activities in the implementation.

For the sustainable phase-out of ODS, China implemented its country program with the principle of four synergies among production phase-out, consumption transition, formulation and implementation of policies and regulations, and development of alternatives. Over 400 projects and 31 sector plans have been developed and implemented with supports from the Multilateral Fund in achieving the complete phase-out of production and consumption of controlled uses of CFCs, halons, carbon tetrachloride (CTC), methyl chloroform (TCA) and methyl bromide (MBr), and the first stage of HCFCs phase-out of controlled uses in both production and consumption sectors. During the implementation of Multilateral Fund projects, China has developed a compliance mechanism which includes monitoring, reporting, verification systems in accordance with the relevant guideline, policies and requirements established by the Multilateral Fund, and has effectively supervised the phase-out activities and its results. The compliance mechanism has been continuously strengthened and improved over time, laying the foundation for the subsequent supervision and management of HCFCs phase-out.

China is the largest country of HCFCs production, consumption and export. HCFCs phase-out in China involves several industries including chemical production, PU foam, XPS foam, room air conditioning, industrial/commercial refrigeration and air conditioning, solvent and

servicing sectors. HCFCs production industries and HCFCs-consumed manufacturing industries have a great implication on the economy and employment of China. The transition from HCFC to environmentally friendly alternatives is full of challenges and complexity in terms of alternative technology, market and industry scale. China's compliance is crucial to the success of the Montreal Protocol due to its high global share.

In 2011, the 64th and 65th Meeting of the ExCom of the Multilateral Fund approved Stage I of the HCFC Phase-out Management Plan (HPMP) for China for polyurethane (PU) foam, extruded polystyrene (XPS) foam, industrial/commercial refrigeration and air conditioning (ICR), Room air conditioning (RAC), Solvent sector and Servicing and Enabling Component to phase out 3,386 ODP tons of HCFCs consumption. The agreement between the Government of China and the ExCom was updated several times and finalized at the 67th meeting. In 2013, the ExCom approved Stage I of the HCFC Production Sector Phase-out Management Plan (HPPMP) for the period 2013-2016. According to the Stage I of HPPMP and for the purpose of achieving the freeze target in 2013 and 10% reduction target in 2015, China had planned to phase out about 3,970 ODP tons HCFCs production at the first Stage.

At the 76th and 77th meetings, the ExCom approved Stage II of the HPMP for China for 6 consumption sectors to reduce HCFCs consumption by 37.6% of the baselines by 2020 and the total phase-out of HCFCs in the PU foam, XPS foam and solvent sectors by 2026. The 79th ExCom meeting approved the Agreement between the Government of China and the ExCom for the implementation of Stage II of the HPMP. The approval of the overall Stage II HPPMP has been delayed, with a bridging fund approved on an exceptional basis at the 81st ExCom for production closure or quota reduction to meet the 2018 compliance target.

According to the Agreements for Stage I/II HPMP and HPPMP, China should meet the annual production and consumption limits of HCFCs including the national level and sector level. The Agreement also stipulates conditions for funding release, monitoring, flexibility, responsibilities of the country and bilateral and implementing agencies, non-compliance issues etc. For the monitoring of Stage I/II HPMP and HPPMP, China will ensure accurate monitoring of its activities under the agreements and will establish and maintain a system to monitor the production and consumption to ensure compliance with the targets. The reporting and monitoring requirements are listed in the appendix of the agreements; these are attached as annexes of the report.

2. Compliance framework to the Montreal Protocol

2.1 ODS management system in China

2.1.1 National-level organizational structure

National Leading Group for the Protection of the Ozone Layer and its Office. The National Leading Group for the Protection of the Ozone Layer (hereinafter referred to as the Leading Group) was set up in 1991 by the Government of China. The Leading Group is responsible for the coordination of critical matters related to the compliance with the Montreal Protocol, review of guiding principles and policies for compliance, review the compliance programme and work plans and oversee the implementation of the work plans, and deal with emerging issues which require the considerations of the Leading Group. As the coordination mechanism for ozone layer protection at central level consisting of 18 ministries at its beginning, the Leading Group has been adjusting its members constantly with the institutional reforms of the

Government of China in the past years. With the most recent restructuring of government agencies undertaken in 2018, the Leading Group is now composed of thirteen ministries. Ministry of Ecology and Environment (MEE, formerly known as MEP), as the leading ministry of the Leading Group, is responsible for the supervision and examination of the implementation of the Montreal Protocol, organization of compliance activities and formulation of policies and measures. Its specific work is undertaken by the Office of the leading group.

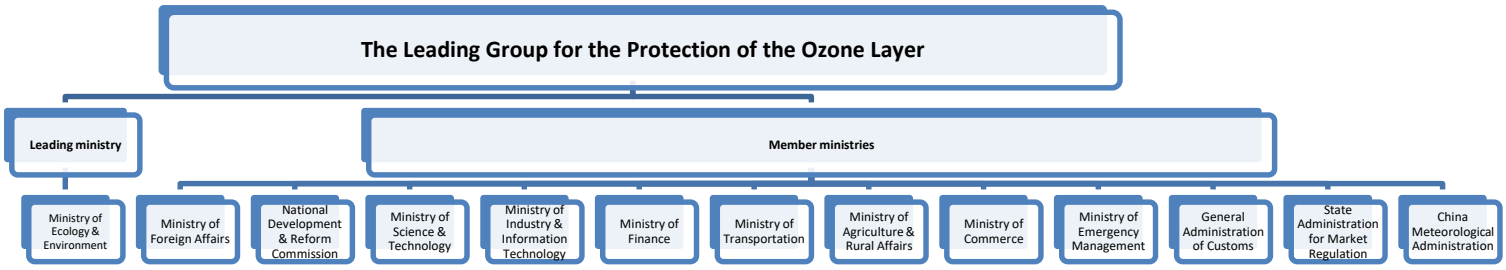

Figure 1 The Leading Group for the Protection of the Ozone Layer

National Management Office for ODS Import and Export. National Management Office for ODS Import and Export (hereinafter referred to as the I/E Office) was co-established by three ministries, including MEE, Ministry of Commerce (MOFCOM) and General Administration of Customs (GAC) in 2000. Its main responsibilities are the daily management of import and export of controlled ODS as authorized by the three ministries. MOFCOM's responsibilities are issuing import & export license to traders and formulating import & export catalogue of controlled ODS of China. GAC is responsible for ODS border management, transforming the catalogue to HS codes, ODS import & export data statistics; supervision, inspection on and release of ODS imports and exports, coordination on the formulation of ODS import & export regulations and policies, and fighting against illegal ODS trades. China's custom branches on borders are under the vertical management of GAC.

Figure 2 National Import and Export Management Office

Coordination Group for the Compliance with the Montreal Protocol within MEE and its Office (National Ozone Unit). Coordination Group for the Compliance with the Montreal Protocol within MEE (hereinafter referred to as the Coordination Group) consists of 9 departments and affiliated agencies of MEE, whose specific work is undertaken by its Office. The Office of the Coordination Group, which undertakes the daily work of the Office of the Leading Group internally, functions as the National Ozone Unit (NOU) of China. As the national focal point of the Protocol and the MLF ExCom, The Office is responsible for daily liaison with the Ozone Secretariat, MLF Secretariat and the international implementing agencies. The Office of the Coordination Group is set up under the Department of Atmospheric Environment, MEE, with Department of Atmospheric Environment, Department of International Cooperation and FECO as members.

Industrial associations and research institutes. The Government of China cooperates closely with relevant industrial associations and research institutes, which mainly participate in data

survey of ODS sectors and potential beneficiaries, research of alternative technologies, formulation of sector phase-out roadmaps and, providing technical consultancy in the development and preparation of conversion project documents and sector plans, providing suggestions to government in the formulation of relevant policies. Industrial associations are also responsible for assisting relevant departments in implementing compliance policies and requirements.

2.1.2 Local EEB and other authorities

Local ecology and environment bureaus (former local EPBs), together with other relevant competent authorities in thirty-one provinces, autonomous regions and municipalities directly under the central government of China have established provincial mechanism for ozone layer protection, which are responsible for: 1) implementing ODS policies, regulations and regulatory documents issued by central government, formulating provincial policies and regulatory documents, for example controlling new construction, reconstruction and expansion projects of ODS and ODS-based products through construction projects management system and environmental impact assessment system; 2) supervising and inspecting the production, consumption, sale, import and export of controlled substances; 3) conducting trainings on environment management and enforcement officers and enterprises; 4）organizing activities to raise the awareness of the public to protect the ozone layer. Besides, local EEBs provide assistance for the implementation of HPMPs, including selecting potential beneficiaries, cross checking ODS production and consumption data, conducting environmental assessments and promoting alternative technologies, etc.

2.2 ODS laws and regulations in China

The Government of China formulates relevant laws, regulations, rules and regulatory documents to support comprehensive domestic compliance in China.

2.2.1 Laws

Approved by the National Peoples' Congress, the *Law on Air Pollution Control and Prevention of the People's Republic of China* (hereinafter referred to as the Law on Air) was revised in 2014 and came into effect in 2015. Article 85stipulates that "the State encourages and supports the production and use of ODS alternatives, reduce the production and use of ODS step by step until complete phase-out. The State implements total amount control and quota management on ODS production, use, import and export. Specific measures shall be prescribed by the State Council".

2.2.2 Regulations on Administration of Ozone Depleting Substances

The *Regulations on Administration of Ozone Depleting Substances* (hereinafter referred to as the Regulations), formulated by the State Council in accordance with the stipulations of the Law on Air and came into force on June 1, 2010, is the most comprehensive special regulation on ODS control in China. The Regulations consists of 6 chapters and 41 articles, which are Chapter I General Provisions, Chapter II Production, Sale and Use, Chapter III Import and Export, Chapter IV Supervision and Inspection, Chapter V Legal Liability and Chapter VI Supplementary Provision. The Regulations establishes total amount control and quota management system, stipulating lifecycle management on the production, sale, use, import

and export of ODS. The Regulations also defines that local EEBs and relevant departments at or above the county level shall be responsible for the supervision and management of ODS within their regional jurisdiction.

Table 1: The Regulation on Administration of Ozone Depleting Substances

Chapters	Chapter Names	Main contents
Chapter I	General Provisions	• formulation and publish of the controlled list of ODS; • lifecycle management on ODS production, use, disposal, recycling and destruction required; • polices formulation required; • encouragement of alternatives and alternative technologies;
Chapter II	Production, Sale and Use	• scope of application of quota and registration management; • conditions of quota application; • procedures of issuing quota;
Chapter III	Import and Export	• license management on ODS import and export required; • responsibilities of MEE, MOFCOM and GAC
Chapter IV	Supervision and Inspection	• requirements on ODS supervision and inspections for environmental protection authorities, especially at local levels
Chapter V	Legal Liability	• punishment on illegal behaviors
Chapter VI	Supplementary Provision	• date of entry-into-force

2.2.3 ODS rules and regulatory documents

MEE, MOFCOM and GAC jointly formulated the *Management Measures of Import and Export on ODS (Ministerial Letter NO. 26)* in order to strengthen ODS important and export management. The document was revised recently in 2014.

Meanwhile, over a hundred supporting policies, regulatory documents and management documents such as bans have been formulated and issued by MEE or members of the Leader Group jointly in order to phase out ODS as per the requirements of the Montreal Protocol. A lifecycle management on ODS, especially HCFCs, based on the above organizational and legal system has therefore been conducted to ensure that ODS consumption and production phase-out are sustainable. Bans on construction projects of new, renovated and expanded ODS production capacity have been implemented through construction project management and environmental impact assessment systems so that the source of ODS production is curbed in line with the phase-out schedule. Quota management has been applied in the management of controlled ODS to reduce production, use, import and export of ODS step by step. Quota and registration management on HCFC production and consumption has been implemented since 2013 in order to ensure the phase-out of HCFCs according to the stipulation of the Regulations.

Table 2: Main policies on ODS management

Classification	Policy
Management on new construction, reconstruction and expansion projects	**Circular on Management of Establishment of ODS Production and Consumption Facilities (MEP Letter No. 2018-5)**
Production and consumption quota management	Circular on Implementation of Quota License for Production of Halon Extinguisher (NEPA Letter No. 1997-764)
	Circular on Strengthening Management of HCFC Production, Sale and Consumption (MEP Letter No. 2013-179)
Import and export management	**Management Measures of Import and Export on ODS (Ministerial Letter NO. 26)**
	China import and export list of controlled ODS (six batches)
Bans	Circular on the Ban of the Re-deployment of Halon Fire Extinguishers in Non-essential Places (MPS Letter 1994-94)
	Circular on the Ban of CFCs in Aerosol Sector (NEPA Letter 1997-366)
	Ban on the Use of CFCs in New Automobile Production in China's Automobile Sector (MMI Letter 1997-099)
	Ban on the Use of CTC as Solvent (MEP Letter 2003-69)
	Circular on the Ban of Use of CFC-113 as Solvent (SEPA Letter 2004-449)
	Ban on the Production and Use of Trifluorotrichloroethane (2005-60)
	Ban of the State Tobacco Monopoly Administration and SEPA on the use of CFC-11 as tobacco expansion agent in the tobacco sector (2006-2)
	Announcement of the State Grain Administration and the SEPA on the Complete Cessation of the Use of Methyl Bromide in the Grain Storage Industry (2006-4)
	Circular on the Ban of Production of CFCs (SEPA Letter 2007-43)
	Ban on the use of chlorofluorocarbons (CFCs) as foaming agents (2007-45)
	Ban on the production, sale, import and export of household electrical appliances with chlorofluorocarbons (CFCs) as refrigerants and foaming agents (MEP Letter 2007-200)
	Ban on the use of methyl bromide in the tobacco sector (2008-1)
	Circular on the Ban of Production and Use of TCA (MEP Letter 2009-39)
	Ban on the use of CFCs in the production of non-inhaled medicinal aerosols (2013-9)
	Ban on the use of methyl bromide in agriculture sector (MOA Letter 2552)
	Announcement on the Ban of Production of Refrigerator Freezer Products, Refrigerated Container Products and Electric Water Heater Products with Fluorodichloroethane (HCFC-141b) as Blowing Agent (MEE Letter No. 2018-49)
Alternative management	Catalogue of Guidance on Industrial Structure Adjustment
	Circular on Issue of Catalogue of Recommended ODS Alternatives (Revised) (SEPA Letter No. 2007-185) (the Catalogue is being updated)
Supervision management	Circular on Strengthening the Supervision and Management of Local Environmental Protection Bureaus in the Protection of the Ozone Layer (NEPA Letter No. 1997-185)
	Circular on Strengthening the Management of Phase-out of Ozone Depleting Substances (SEPA Letter No. 2007-40)

Ecology and environmental authorities at national and local levels take different responsibilities in ODS management. ODS management, therefore, are conducted currently through a two-tier modality at national and local level as per the stipulation of the Regulations. Details are showed in Table 3.

Table 3: ODS Management at national and local level in China

National Level	Production quota management
	Consumption quota issued (exemption, critical use, HCFCs >100 mt)
	Import/Export license
	Registration for feedstock use
	Registration for HCFCs sales (>1000 mt)
Local Level	Ban on new construction project of ODS production and consumption except feedstock use
	Registration for HCFCs sales (<1000 mt)
	Registration for HCFCs consumption (<100 mt)
	Registration of ODS recycling/reuse/destruction at provincial level
	Registration of servicing with ODS at county level or above
	Supervision on enterprise level and law enforcement

3. Monitoring, reporting and verification under Stage I and Stage II HCFCs phase-out

3.1 Review on implementation of HCFCs phase-out at the national level

3.1.1 HCFCs phase-out overall progress of Stage I and Stage II

Since the approval of Stage I of the HPMP in 2011 and Stage I of HPPMP in 2013 by the ExCom, China has achieved significant progress in HCFCs phase-out and met compliance targets of 2013 freeze and 2015 10% reduction. At the first stage, the production sector phased out about 71,000 MT of HCFCs and closed down 5 production lines with a total production capacity of 88,000 MT. For the consumption sectors, 154 enterprises in the 5 manufacturing sectors conducted conversion projects with a total phase-out of 42,012 MT. Table 4 below are the numbers of conversion projects in 5 manufacturing sectors and associated amounts of phase-out under the Stage I HPMP. The refrigeration servicing sector contracted 18 training centers, trained about 5,000 technicians and made significant development in standard establishment, supervision of import and export, conducting public awareness and capacity building.

Table 4: Conversion projects for Stage I of HPMP

Sector	Number of lines/ enterprises	Phase-out Amount (MT)
PU foam	57	12,969
XPS foam	25	9,590
Solvent	9	610
RAC	29	10,814
ICR	34	8,029
Total	**154**	**42,012**

The HCFCs phase-out in the production sector achieved great climate benefit. The total climate impact from HCFCs reduction from the 2010 production level during 2013 to 2017, including the impact from HFC-23 emission reduction over those years, represents about 1,165 million tons of CO_2 eq.

At the 76th and 77th meetings, the ExCom approved Stage II of the HPMP for China for 6 consumption sectors for the period 2016 to 2026 in the amount of US$500.1 million, to reduce HCFCs consumption by 37.6% of the baseline by 2020 and to achieve complete phase-out of HCFCs in the PU foam, XPS foam and solvent sectors by 2026. With the first two tranches approved (except for the PU foam sector), conversion contracts with 61 enterprises resulting in a total phase-out amount of 10,251 MT have been signed. The 80th ExCom meeting approved on an exception basis US$23m to enable the maximum allowable level of HCFCs production for 2018 at 22,742 ODP tons. A production line closure contract was signed with Zhejiang Sanhuan to phase out 3,182 MT of HCFC production. 23 HCFC production quota reduction contracts were signed with 18 producers resulting in a phase-out of 13,028 MT.

China has made progress in implementation of Stage II of the HPMP. Market of the low GWP alternatives is growing through the joint efforts by the government, industries and stakeholders. Continued efforts through the implementation of HPMP and HPPMP are necessary to keep the momentum and ensure the compliance target and other objectives of the projects to be achieved.

Development of alternatives to HCFCs for sustainable phase-out. In line with the spirit of decision 19/6 of the meeting of parties, the government of China and relevant industries has made great efforts to promote ozone and climate friendly technologies to HCFCs to avoid the transition to high GWP HFCs as much as possible. Since 2010, eight innovative demonstration projects for the low GWP alternatives in PU foam, XPS, RAC, ICR and solvent sectors has been developed and implemented in China. To facilitate the transition to low GWP alternatives, a large amount of research and development, risk assessment, standard establishment and revision, ender user demonstration, and public awareness activities were carried out by MEE, line ministries, local governments, academic institutions and industries. Among all the conversion activities at Stage I, natural refrigerants or low-GWP alternatives account for about 76%, medium-GWP alternatives for 10%, and the percentage of high-GWP transitional substitutes at no more than 14%. The percentage of environment-friendly alternative technologies is higher than the goal of sector plans, especially for the foam and solvent sectors in which 100% of low-GWP technologies were adopted. With the adoption of the low-GWP alternatives, an estimated emission reduction of 86.3 million CO_2 eq. tons annually could be achieved. At the second stage, China raised its ambition of transition to green economy. All sectors selected ozone and climate friendly technologies to replace HCFCs. The temporary transition from HCFCs to high GWP HFCs will not be funded in the HPMP supported by the Multilateral Fund.

The technology choice for different sectors in the Stage-I HPMP is shown in the table below.

Table 5: Alternative technologies of each sector

Sector	Alternative technologies for Stage I	Alternative technologies for Stage II
PU foam	Hydrocarbon (86%), water (14%)	Hydrocarbon, water, HFO
XPS foam	CO_2 (100%)	Optimized CO2
RAC	R290 (71%), R 410 (29%)	R290, CO2
ICR	HFC-32 (53%), NH_3/CO_2 (12%), R 410 (29%) HFC-134a (6%)	CO2, NH3, NH3/CO2, HFO, HC, HFC-32
Solvent	Hydrocarbon (97%), HFO (3%)	KC-6, Hydrocarbon, HFE

Considering alternative technologies facing with many obstacles in development and application, a series of technical assistance activities were conducted to remove technical barriers, assist in a smooth transition to low-GWP alternative technologies and facilitate sustainable phase-out of HCFCs. These activities include technical and product standard revision/formulation, research and optimization of alternative technologies, safety standard and measures, provincial monitoring, training etc. Major TA activities on alternative technologies in each sector are as following:

XPS foam sector plan: TA activities include formulation and revision of standards on XPS foam board for thermal insulation, study on new flame retardants and optimization of CO_2 technology, and revision of a White Book for Safe production with CO_2 technology etc., which supported and promoted HCFCs phase-out in the XPS foam sector.

PU foam sector plan: Over 20 TA activities were designed to promote the application of alternative technologies and sustainable HCFC-141b phase-out in China. A safety standard for using HC alternatives in PU foam was drafted. A series of studies on optimizing alternative technologies in different subsectors were conducted. Provincial monitoring activities including random sampling detection were designed and implemented to monitor the compliance of the PU foam enterprises in key regions. Ban on the Manufacturing of Refrigerators, Freezers, Reefer Containers and Electric Water Heaters Using HCFC-141b as Blowing Agent was issued in 2018 and came into force since 2019.

Solvent Sector plan: Training and workshops were organized to communicate latest information about the alternative technologies and facilitate experience sharing among enterprises. HCFCs Phase-out Technical Conversion Guideline in the Medical Devices Sub-sector was prepared and disseminated to relevant enterprises.

RAC sector plan: Research on R-290 technology was conducted including experiments and risk assessment on leakage of R-290, performance optimization of R-290 compressor based on reduced lubricant use, refrigerant charge reduction through the use of microchannel technology, and existing efficiency codes and standards on refrigerant uses.

ICR sector plan: Studies on the application of low-GWP alternative technologies were conducted to assist in their adoption, including R-32 water chiller and unitary air-conditioning, water chillers using HFO/HFO blends, R-290 commercial heat pump, Ammonia/CO_2 in refrigeration and food storage, CO_2 heat pump and CO_2 technology in supermarkets. Revision of 11 technical and product standards were completed. Revision of the National Standard for Safety and Environmental Requirements for Refrigeration Systems and Heat Pumps (GB-9237) to allow for the use of flammable refrigerants has been completed and the revised standard went into effect on 1 July 2018. Market of the above low GWP alternatives in China is growing.

Refrigeration servicing sector: TA activities include establishment of training centers, training technicians/trainers on good servicing practices and handling R-290 refrigerant, distribution of training publications on good servicing practices for refrigeration and air conditioning equipment. Code for transportation and installation of room air conditioner and code for servicing and maintenance of commercial refrigeration were revised and approved.

3.1.2 HCFCs monitoring and reporting under the overarching strategy

According to Article 7 of the Montreal Protocol, parties shall provide to the Ozone Secretariat statistical data on its annual production, imports and exports of each of the controlled substances each year. In addition, A5 parties are required to submit annual Country Program data to the Secretariat of the Multilateral Fund each year. HCFCs data were collected from production enterprises quarterly and from consumption enterprises on yearly basis. The

annual import and export data for HCFCs are from the record of the GAC. According to the HPMP and HPPMP Agreement between China and the ExCom, the World Bank shall verify HCFCs production data and import and export data each relevant year. The World Bank has been carrying out yearly verification to all the production enterprises and verification on the import and export data since 2013. The detailed verification reports were submitted to the Secretariat of the MLF and the Executive Committee for its review. The verification reports were treated as the confidential documents only available to the MLF Secretariat and the ExCom members because it contained a large amount of corporate business information. The HCFCs data in the A7 and CP data submitted by China are consistent with the verification report and the recorded import and export data by the GAC. National HCFCs consumption was calculated in line with the definition of the Montreal Protocol. The consumptions at the sector level were determined according to the methodology in the HPMP agreement and data collected through the quota system, national statistics and other relevant information collected by the industrial associations. The A7 data and CP data submitted by China showed that China has met the HCFCs phase-out targets as schedules both at the national level and sector level from 2013 to 2017.

Table 6: HCFC Production and Consumption of China for 2013-2017 (ODP tons)

	2013	2014	2015	2016	2017
Production target	29,122	29,122	26,210	26,210	26,210
Actual production	26,599	27,180	21,899	21,514	21,671
Consumption target	18,865.4	18,865.4	16,978.9	16,978.9	16,978.9
Actual consumption	17,196	16,839	13,485	14,221	14,605

As China has large HCFC production, export and consumption, involving chemical production, PU foam, XPS foam, RAC, ICR, refrigeration servicing and solvent sectors, it requires effective and efficient coordination at the national level to ensure phase-out targets are achieved in a collective manner. Coordination meetings were held each year with participants from international implementing agencies, bilateral agencies, MEE, industrial associations, research institutes and other stakeholders. Coordination meetings enabled regular monitoring and review of the progress of seven sector plans and facilitated collective actions to ensure smooth implementation of the sector plans. With management and monitoring at the national level, review and submission of annual progress reports and implementation plans were timely submitted to the Executive Committee as required.

The 70th meeting of the ExCom requires the implementing agencies to submit an annual audited financial statement to be provided by FECO/MEE including funds received from implementing agencies, disbursement to final beneficiaries and interest earned on the balance of Stage I of HPMP. Similar decision was made when Stage I of HPPMP was approved. Financial audit reports were prepared by the qualified independent accounting firm and submitted to the Secretariat of the Multilateral Fund from 2012 to 2017. The accrued interest from HPMP and HPPMP in those projects was offset against the new tranche approvals according to relevant decisions of the ExCom.

3.2 Management and monitoring on HCFCs production

3.2.1 HPPMP Agreement provisions and obligations

At its 69th Meeting, the Executive Committee approved China's Stage I HPPMP to assist China in meeting the 2013 freeze and the 2015 10% reduction of China's Montreal Protocol HCFC production baseline (Decision 69/28).

More specifically, the requirements of the framework agreement for total phase-out of HCFC production for controlled uses includes the following:

a) The amount of HCFC production for controlled use to be phased out by the HPPMP is 445,888 tons based on verified 2010 ODS production data.
b) To retire an additional 24 percent (107,013 MT) of the production capacity based on the tonnage of 445,888 MT.
c) To close and dismantle the production lines producing HCFCs only for controlled uses in 2010.
d) To ensure that any compensated plant does not redirect any phased out HCFC production capacity towards feedstock.
e) Funding for Stage I and beyond should be used to prioritize total permanent closure and dismantling of production lines.
f) To optimize the implementation of HPPMP in order to minimize environmental and climate impacts as much as possible, including by giving priority to HCFC production closure to achieve HCFC reduction targets set forth in the MP Decision XIX/6.

3.2.2 Monitoring, reporting and verification under HPPMP

In order to achieve the compliance targets of HCFC production sector, the government of China issued specific policies to ensure the implementation of HPPMP, established a tradable production quota management system covering all producers and all HCFCs, issued annual total and domestic use production ceiling according to the targets set up in HPMP and HPPMP Agreement, developed registration mechanism for HCFC sales and feedstock uses, operated an on-line management information system (MIS) for quarterly data reporting of monthly production, and implemented the open bidding for production line closure and proportionally quota reduction. Besides that, China continuously strengthens its supervision of HCFC production through the independent verification by the implementing agency (the World Bank) and monitoring by local EEBs. The training and communication with all producers on the production line closure, quota allocation and implementation, policy implementation, issues identified in the verification report has been organized regularly with the presence of the representatives from the international implementing agency to improve the management. Following are some details of HCFC production management.

3.2.2.1 Policy Measures

a) **In 2008, MEE issued *Circular on Strict Control of HCFC Production Facilities (MEP Letter 2008-104)*, which forbids the new construction, reconstruction and expansion of HCFC production facilities for controlled use**. It also defines the requirements that the new construction of integrated HCFC production facilities and downstream feedstock use facilities should be approved by MEE before construction. Moreover, it is not allowed to exceed the capacity during the relocation or reconstruction of the existing HCFC production facilities. In view of the need for long-term management of HCFCs and the continued nature of the

negotiations on HFC phase-down, since the release of this circular, MEE suspended all applications for the establishment of new HCFC facilities for feedstock use till the year 2015 when more strict approval conditions and procedures for the feedstock use were introduced and agreed upon by the stakeholders. In the approval process for the feedstock use, a publicity procedure was introduced for greater transparency to enable social supervision. The issuance of the circular and the more rigorous approval procedure for feedstock use reduces the likelihood of overcapacity being created for of HCFC production, facilitated the long-term management of HCFCs, and decreased the emission of by-products (HFC-23) of HCFC-22.

In the year of 2018, MEE issued the *Circular on Management of Establishment of ODS Production and Consumption Facilities (MEP Letter 2018-5)* which is aimed to consolidate the construction management of all the substances. Meanwhile, the new circular replaced 9 circulars related to the construction of ODS production/consumption facilities issued before.

b) In order to meet the targets of HCFC production and consumption sectors for 2013 freeze and 2015 reduction, in line with the Regulations, ***Circular on Strengthening Management of HCFC Production, Sale and Consumption*** **was formulated and issued by MEE on 7 August 2013 (MEP letter 2013-179)**. According to the circular, MEE issues the HCFC production quota to each producer and HCFC consumption quota for the enterprises with annual consumption of more than 100 tons respectively. The circular also requires that all the HCFCs feedstock users and HCFC dealers with the annual sales volume of more than 1,000 tons (including) should register in MEE; HCFCs users for control use less than 100 tons per year and HCFC dealers less than 1,000 tons per year should register in local provincial EEBs. The Circular (MEP letter 2013-179) strengthened the management measurements on HCFCs compared to the previous policies.

3.2.2.2 Management Mechanism

a) Production Quota System for Controlled Uses

China uses production quotas to control the production of HCFCs in accordance with the control targets under the HPMP and HPPMP Agreements. Each HCFC producer is required to have a production quota license before it can produce and sell HCFCs for controlled use. Production quotas are only valid for the calendar year for which they were issued. MEE will provide each eligible HCFC producer with a two-tier quota for ODS production. The total production quota will be used to keep the ODS production within the HPPMP control targets, taking into account of imports that may take place during the calendar year. Within the total production quota, each eligible producer will receive production quota for domestic use. The purpose of the production quota for domestic use is to ensure China meets its consumption control targets under the HPMP Agreement. When applying the production quota, producers must submit the supporting documents in line with the requirements stipulated in the ODS regulation. The on-line publicity of quota allocation in the website of MEE and China Ozone Protection Actions before the approval has been ensured for information transparency and public supervision.

The production quota can be traded between eligible HCFC producers either for one year or on a permanent basis so as to facilitate the industrial rationalization of the production. Producers must request and receive approval for quota trading from MEE. Quota trading request can be applied twice each year. The information of quota adjusted will be published to the public. The quota notice will be sent to each producer and the local EEBs who are responsible for the regular monitoring of the production. The practice of tradable quota was welcomed by the industries as an economic and effective way to organize the production efficiently through co-ordination. Such mechanism also contributed to the effective monitoring of the production.

As mentioned in above, all the producers are required to report the monthly production data

to MEE on a quarterly basis. The reported data were analyzed by MEE during the year to ensure the compliance of the producers within allocated quota and to prevent potential careless mistakes of producers. The reporting data was verified by independent technical and finance experts after the year.

b) Registration Management for HCFC dealers

The enterprises that sell more than 1,000 tons (including) per year are required to register with MEE. Each year, the producers and large dealers should submit their application to MEE for the annual registration. After reviewing the application document, MEE will publish the registration information on-line, including the list of registered dealers and substances they are allowed to sell.

According to Circular (MEP Letter 2013-179), the enterprises that have an annual sale of less than 1,000 tons should register in local provincial EEBs. The sales information is helpful for MEE and local EEBs to monitor the market and consumptions.

c) Registration Management for HCFC feedstock users

Since the feedstock management is very important to ensure the sustainable phase-out of HCFC for controlled use, all HCFC feedstock users are required to register to MEE on a yearly basis. Each year, all feedstock users should apply for the registration for HCFC feedstock use. After reviewing the application document, MEE will publish all the registration information, including the list of registered feedstock users and substances they produce by using HCFCs.

Furthermore, it is required that only the registered feedstock users are allowed to purchase HCFCs from qualified HCFC producers and registered HCFC dealers. All the HCFC production for the feedstock usage by themselves and sold to domestic users and foreign users were carefully verified by the independent technical and financial experts based on the registration information of MEE, contracts and financial records.

3.2.2.3 Data Reporting

During the implementation of Stage I, a Management Information System (MIS) has been developed. Through this system, all the enterprises that are supervised directly by MEE could apply for production quota, sales registration and feedstock use registration on line and report the relevant data in a quarterly basis. The data to be reported is shown as follows,

a) HCFC producers: HCFC production, purchase, detailed sales information for different uses (including sales amount, the buyer and users), internal use, stockpile, as well as the raw material.

b) HCFC dealers: detailed purchase information (including purchase amount, the providers and users), detail sales information for different uses (including sales amount, the buyer and users).

c) HCFC feedstock users: detailed purchase information (including the providers and purchase amount), the amount and kinds of the chemicals they produced by using HCFC as the raw material.

Through the analysis and cross-check of the reported data and information, PMO could monitor the implementation of production quota for each producer, quantities of HCFC feedstock use and provide the information for the in-site monitoring and verification.

3.2.2.4 Monitoring

a) Monitoring of implementation of HCFC production quota

As mentioned above, a centralized data reporting system was established as the tool to track the implementation of HCFC production quota. Apart from date reporting system, FECO and

the international agency World Bank conducted site visits to HCFC producers each year to supervise the implementation of HCFC production quota through checking the status of HCFC production facilities and relevant production and sales records.

On the local level, EEBs are responsible for the monitoring to enterprises in line with the ODS regulations. In case the wrong-doing by enterprises are identified, local EEBs will investigate and dispose of illegal acts.

b) The supervision and verification of HCFC production closure

In order to close all the production lines only for controlled use and retire the additional 24% idle capacity as required by the HPPMP agreement, China has been giving priority to HCFC production closure and retirement. FECO along with the World Bank designed the bidding mechanism carefully to provide incentives for the closure and retirement of idle capacities. The bidding mechanism worked very well during the implementation of Stage-I HPPMP. Other measures are listed below:

i) The production line closure projects shall be strictly following the requirements of the World Bank's Environmental and Social Management Framework. The enterprises shall prepare and submit Environmental management plan, Resettlement plan, Site investigation report and Site environmental risk assessment report to World Bank for approval. If the remediation of contaminated sites is necessary, the enterprises shall also submit remediation plan of contaminated sites. The safeguard focal point of the World Bank is responsible for the review and supervision of social and environmental impact of the project.

ii) According to the project requirement, local EEBs shall supervise the procedure of production line closure and provide certificate for equipment dismantling. FECO will supervise the destruction of key equipment of the production line. The enterprises shall record such process by video or image.

iii) During the project implementation, the World Bank and FECO organized site-visits for the supervision of the project progress and achievement of agreement. In the Stage I, FECO and the World Bank organized 5 times joint site-visits for each enterprise contracted for the production line closure.

iv) After the project implementation, the World Bank will commission independent experts for the verification to confirm the achievement of dismantling and permanent destruction of production line.

3.2.2.5 Production, Import/Export verification and Feedstock verification

a) Production and Import/Export verification

As per the requirement of the agreement, China's HCFC production situation should be verified by following the Executive Committee's Guidelines and Standard Format for verification of ODS production Phase-out using the Montreal Protocol's definition of production. The annual verification is normally conducted from April to August each year. The World Bank will commission teams of independent technical and financial experts to verify the HCFC production situation, including production data for controlled and feedstock uses, facility capacity and operation status, stockpile, domestic uses, import and export, and HFC-23 byproduct emission on a voluntary basis. In addition, the verification also includes the review of production line closure project.

b) Feedstock verification

Significant HCFC quantities have been used in house by the producers themselves for the downstream production and were verified by the World Bank experts. For the registered

feedstock users purchasing HCFCs, China conducted the verification every two years to check the technical route of using HCFC and to verify the data of their purchasing records.

3.2.3 Lessons learned

The Stage I HPPMP has been successfully implemented by MEE with support from the implementing agency and ensured the compliance of China for the HCFC freeze target in 2013 and the 10% reduction target in 2015. A comprehensive and effective regulation and supporting policy framework, monitoring, verification, and reporting system for the HCFC production phase-out has been established and implemented. Lessons learned in this process could be summarized below:

- ODS regulation issued by the State Council on 2010 provided a comprehensive legal framework to regulate ODS in China. Circular (MEP Letter 2013-179) is explicit on the control measures for HCFCs management both on the national level and local level. The ban on the new establishment of HCFC facilities has been strictly implemented from 2008 to ensure the upstream control for the sustainable phase-out. The quota and licensing system for HCFC production, consumption, import and export, has been designed to suit the requirements and complexity of HCFC phase-out in China and were proven to be effective in achieving the phasing out target of HCFCs.

- An open bidding mechanism for production closure and quota reduction arrangement has been implemented successfully and demonstrated the feasibility to meeting the requirements in the overarching HPPMP agreement.

- A robust monitoring, verification and reporting system for HCFC production phase-out has been established in line with the HPPMP Agreement. This system includes the monitoring, verification and reporting both for the controlled use and feedstock use. The capacities of MEE, local EEBs and the implementing agency to manage the production sector of HCFCs have been strengthened through the implementation of the Stage-I HPPMP.

- Independent production verification to all producers are critical to ensure the compliance to the regulation. The recommendations of the verification report, the review and comments of the MLF Secretariat to the verification report also helped China and producers to improve the management constantly.

- The role of local EEBs for the smoothly implementation of HPPMP is very important. Apart from the specific HCFC regulation, the general environment management measures such as EIA, routine monitoring to the enterprises have been contributing to the effective HCFC production management. The safeguard policy of the World Bank ensured the properly implementation of production line closure to avoid the negative impacts to the social community and environment.

- Regular training and consultation with HCFC producers, dealers and feedstock users are necessary for the smooth and effective implementation of HPPMP. Publicity of the issuance of quota, registration of HCFC dealers and feedstock users, the review process of the establishment of the new HCFC fallibilities ensured the transparency of the relevant information, enhanced the motivation and confidence of the stakeholders in compliance, and strengthened the supervision by the public.

3.3 Management and monitoring of HCFCs consumption

3.3.1 HPMP Agreement provisions and obligations

At the 64th ExCom meeting, it adopted Decision 64/49 to approve in principle Stage I of the HPMP for China for the period 2011 to 2015 to reduce HCFC consumption by 10 per cent of the baseline. The meeting also approved the draft Agreement between the Government of China and the Executive Committee for the reduction in consumption of HCFCs (hereinafter referred to as "the Agreement"). Subsequently, the Agreement was revised and updated at the 67th ExCom meeting as Decision 67/20.

A national maximum HCFC consumption target and separate target for five manufacturing sectors has been set out in Appendix 2-A in the HPMP Agreement. The release of tranches for a sector plan will depend on the compliance of the national consumption target, sector consumption target, the implementation progress of the annual work plan and disbursement to the final beneficiaries in the previous tranche.

The Agreement also requires China should ensure that it conducts accurate monitoring of its activities under the Agreement, and should also establish and maintain a system to monitor the consumption in the different sectors, to ensure compliance with the sector consumption limits set out in Appendix 2-A. The institutions set out in Appendix 5-A ("Monitoring Institutions and Roles") should monitor and report on implementation of the activities in the previous annual implementation plans in accordance with their roles and responsibilities set out in Appendix 5-A. This monitoring should also be subject to independent verification.

Appendix 5-A under the Agreement further stipulated the roles of monitoring institutions and verification methodology. The Foreign Economic Cooperation Office/Ministry of Environment (FECO/MEP) is responsible for the overall co-ordination of activities to be undertaken in the HPMP with assistance of the Lead IA and acts as the National Ozone Unit, responsible for carrying out national policies and legislations regarding the control of HCFC. **The national consumption should be monitored and determined based on production data and official import and export data for the Substances recorded by relevant government departments in line with the Agreement**. In addition to the national system of licensing and quotas for HCFC imports, production and exports, a quota system covering enterprises using large quantities of HCFC in the different consumption sectors, where applicable, should be established to control the consumption growth, achieve the consumption reduction in those enterprises and collect the consumption data. For those sectors with large amounts of small and medium enterprises, the consumption would be managed by limiting the quantities of the relevant substances to be sold to the domestic market. FECO/MEP would closely supervise those enterprises carrying out the conversion activities in Stage I of the HPMP to ensure the phase-out target in those enterprises had been achieved. FECO/MEP would co-ordinate with the Lead IA and Cooperating IAs to facilitate the verification of the targets set in the Agreement.

The Stage II HPMP for China along with six sector plans were approved at the 77th ExCom meeting. Subsequently, the Agreement (Stage II) was concluded at the 79th ExCom meeting. Since above monitoring, reporting and verification requirements stipulated in the Agreement have been proven effective during the implementation of Stage I, the Agreement (Stage II) follows the similar monitoring, reporting and verification requirements and approaches as those of Stage I.

3.3.2 Monitoring, reporting and verification under HPMP

3.3.2.1 HCFC consumption quota and registration management

As agreed between the Government of China and the ExCom and stipulated in the HPMP Agreement, in addition to the national system of licensing and quotas for HCFC imports, production and exports, a quota system covering enterprises using large quantities of HCFC in the different consumption sectors, where applicable, should be established to control the consumption growth, achieve the consumption reduction in those enterprises and collect the consumption data.

In response to above requirement to effectively control the consumption growth of HCFC and ensure its reduction as scheduled, MEE issued the *Circular on Strengthening Management of HCFC Production, Sale and Consumption* (MEP Letter No. 2013-179). According to the circular, all HCFC producers in China should hold quota permissions. HCFC consumers with no less than 100 MT of annual HCFC consumption for controlled uses should apply for and hold quota permissions, while those with less than 100 MT of annual HCFC consumption for controlled uses should register at the provincial environmental protection agencies. MEE is responsible for the formulation of the overall quota allocation scheme for each year. All HCFC distributors should register with respective environmental protection agencies at different levels upon their sales volumes.

Accordingly, since the year 2013, MEE, jointly with relevant government departments, have been applying the national system of licensing and quotas for HCFC imports, production and exports, and has been issuing quotas for large HCFC consumers (with annual consumption larger than 100 MT) in manufacturing sectors every year.

According to the ODS Management Regulation and the Circular, the HCFCs consuming enterprise of over 100 MT shall apply to MEE for a consumption quota for the next year before October 31 of each year, and submit supporting documentations proving that the unit is eligible for consuming HCFCs, has obtained places, facilities, equipment and professional technicians that can utilize HCFCs for manufacturing, and has approved environmental protection facilities and sound internal management system.

The MEE review the consumption quota application before December 20th. During the review process, the reduction targets by sectors set out in the HPMP Agreement, the actual consumptions of the companies in previous years, and the status of the conversion projects supported by the HPMP will be considered for specific sector and companies. Only when the applicants meet all requirements, MEE issues the consumption quota license for the next year. MEE also copies it to the relevant provincial EEBs where the enterprises locate for their monitoring. In case of the rejection of the application, MEE shall notify the applicant in writing with the reasons. The quota system for large consuming companies was proved to be a very effective tool for the sectors with majority or significant consumption at large size enterprises such as RAC, ICR, XPS and some subsectors of PU foam. This measure advanced the transformation first in large companies who are leading the market. Foreign ownership companies also need to apply for the quota same as the local companies and are required to reduce their consumption according to the phase-out schedule of the HPMP. The information collected through this quota system has been considered in finalizing the Country Program data report to the Multilateral Fund and in the project implementation of the sector plans. All the baseline consumption data in the large size companies has been verified in the preparation of the conversion projects in the sector plan. For the sector with large amounts of SMEs, the control measure in the sector level will basically depend on the domestic production quota,

import and export control through licensing system, sales registration and user registration system at local level.

The HCFC distributors, including system houses in PU foam sector, with sale volume of HCFC larger than 1,000 MT have been registered at MEE.

Case1： HCFCs registration practice in Shanghai

Shanghai has established the HCFCs registration system since the year 2013, in accordance with the Circular on Strengthening Management of HCFCs Production, Sale and Consumption (MEP Letter No. 2013-179) issued by MEE. In 2014, Shanghai issued the Circular on the Registration Management of HCFC production, consumption, sales and servicing at its municipality level. Each year, Shanghai also publishes the notification on the registration management and discloses the results of registration to the public.

Shanghai so far has developed online registration system, and the operation of the system is proven effective and efficient. The registration information includes basic information of enterprises, sectors/applications, type of HCFCs, the amount of HCFCs consumption/sales, etc.

HCFCs registration information in Shanghai from 2013-2018

Year		2013	2014	2015	2016	2017	2018
Sectors		Number of enterprises					
Feedstock use		6	7	6	5	3	2
Controlled uses	Solvent	15	15	13	13	10	11
	Foam	15	15	14	14	15	16
	Refrigeration	20	19	19	19	16	15
Sales		41	46	47	48	44	33
Total		**95**	**100**	**97**	**97**	**88**	**77**

3.3.2.2 Monitoring, reporting and verification on conversion sub-projects

Baseline verification prior to the signature of sub-contract

Since HPMP was approved, with the guidance from MEE and the national leading group, FECO shall implement the HPMP and comply with the phase-out targets. The phase-out impacts are achieved through policy implementation, conversion activities, and technical assistance activities.

In terms of conversion sub-projects, FECO disseminates and advertises the invitation of project proposals to the relevant sectors after the tranches of HPMP are approved by the ExCom and the implementation plan are agreed by the implementing agencies. Each enterprise that applies for MLF grants shall entertain the on-site baseline verifications organized by FECO. The verification team consists of the staff from the accounting firm and technical experts, which are selected by FECO through open and competitive selection. According to the TOR, the financial consultants go through the HCFCs purchase invoices and also check the enterprise's production data, bank transferring records, warehouse inventory, and other supporting

documentations to crosscheck the HCFCs baseline consumption. On the other hand, the technical expert is responsible for evaluating technical aspects, such as technical capacity, the status of equipment, the conditions of the manufacturing plants, etc., and providing technical advice that may arise during the verification. The technical expert also provides technical inputs to evaluate whether the HCFCs consumption matches with the production capacity and product data. The verification team takes photos of the production sites and verification activities. The information on the enterprise's eligibility, baseline consumption, HCFC-based equipment and other important information are collected. All the materials used during the verification should be copied and stamped by the enterprise.

The baseline consumption results are concluded in the verification report prepared by the accounting firm, including an integrated part of technical evaluation. The report is submitted to FECO for review. Based on the information in the verification report, the eligibility of the company for funding is determined. The funding level for the conversion projects is determined in accordance to the Multilateral Fund cost guideline, funding allocation criteria set up in the project implementation manual approved by the implementation agency, as well as the proposals from the beneficiaries.

Monitoring, reporting and verification during the implementation of conversion sub-projects

After the baseline consumption is determined, the beneficiary enterprise should prepare an implementation plan determining their selection of alternative technologies, conversion timeline, procurement plan, the equipment relevant to the use of HCFCs to be dismantled, budget plus counterpart funding, along with a commitment letter from the legal representative for the sustainable phase-out of HCFCs. The implementation plan should be subject to a decision of project evaluation panel organized by FECO. Upon the approval of the implementation plan by the panel, FECO would then sign the sub-grant agreement with the beneficiary enterprise.

In the sub-grant agreement, it is clearly stated that if the beneficiary enterprise fails to stop the use of HCFCs in accordance with the provisions of the sub-grant agreement, or continues to use HCFCs and other phased-out ODS, it will be regarded as breaching party. In the case of any breach-of-agreement situation, FECO has the right to take actions against beneficiary such as requiring beneficiary to immediately correct its breach and paying a breach penalty up to 10% of the value of the sub-grant agreement, suspending further disbursement to the enterprises, or unilaterally terminating the sub-grant agreement and requiring an immediate return of all project grants obtained by beneficiary.

Once the sub-grant agreement is signed with the beneficiary enterprise, the beneficiary should start conversion activities in line with the approved implementation plan, and apply for verifications for certain technical and financial milestones that are specified in the sub-grant agreement. After the beneficiary completes the installation of new equipment and completes the trial of using alternatives, then the implementation supporting agency (ISA) or independent technical experts will conduct the on-site verification. For the beneficiary that used MLF to procure equipment, ISA verification checks the installed equipment in line with the implementation plan, and the specifications in the procurement contract between the beneficiary and equipment supplier. If there may occur discrepancy during the verification, the ISA will have to require the beneficiary to submit explanations, and the ISA should also provide justification from the technical perspectives. The ISA also interviews with the enterprise and go through documentations such as production logs, raw material procurement invoices etc., to make sure that the beneficiary is operating well with the alternative technologies. After the verification, ISA should conclude the findings in a verification report and submit to FECO. The ISA verification report is one of the conditions to trigger further disbursement to the beneficiary in accordance to the sub-grant agreement.

An independent accounting firm will conduct on-site performance verification as well. The performance verification focuses more on the use of MLF fund and timely suspension on HCFCs. The scope of the verification includes collecting the information on the HCFCs consumption and procurement after the signature of sub-grant agreement, the date of the end point of purchasing HCFCs, and the data of using up the HCFCs stocks in the enterprise. The verification team also verifies the payment made to the equipment/raw material suppliers for purchasing HCFCs alternatives and/or new facilities, the financial records of disbursement, purchase invoice, and disposal of baseline equipment. The enterprise's financial records, including sales and production volume of final products, as well as the sales contracts and the products related to the HCFCs conversions are verified along with the documentations mentioned above. The performance verification will confirm that the MLF fund allocated to the beneficiary are all paid to the conversion activities in accordance with sub-grant agreement, and the enterprise has stopped purchasing and using HCFCs for production.

Sub-project completion and verification after conversions

After the beneficiary completes its conversion, adopts the alternative technologies, passes the ISA on-site verification and performance verification mentioned above, and gains the required approval from local EEB and relevant authorities, then the beneficiary could apply for sub-project acceptance. As part of the application, the beneficiary is required to provide a sub-project completion report that comprehensively describes the conversion process and the results of the conversion. FECO then organizes a commissioning team that is composed of technical experts, local EEB officials, staff from FECO and members from ISA. The representative of implementation agency has been invited to participate in the acceptance when they are available. The team usually conducts on-site acceptance.

During the acceptance, the commissioning team listens to the presentation on the sub-project implementation made by the beneficiary, and inquires how the beneficiary overcomes potential technical obstacles. The team also checks the production status using alternatives through on-site visit, and go through the verification reports, approvals from local authorities and other documents to make sure the beneficiary completed all conversion activities without breaching from sub-grant agreement. The commissioning team provides conclusion to FECO, and FECO finally issues the certificate of acceptance to the beneficiary.

Once the beneficiary receives the certificate of sub-project acceptance, it can no longer use HCFCs for production in the future according to the commitment, and local EEB will be in charge of the long-term monitoring on the enterprise's compliance. FECO provides the list of enterprises that has completed conversions to relevant provincial EEBs, and provincial EEBs will deliver the information to local level. According to the list, these enterprises can neither apply for HCFCs quota nor register HCFCs consumption at provincial level. The EEBs will include these enterprises in the monitoring list subject to the enforcement activities.

Besides the EEB's monitoring, all beneficiary enterprises are obliged to receive inspections and verifications conducted by the implementation agencies (IA) or their designated institutions. The IA verifications are usually conducted once a year to random beneficiary enterprises in line with the requirements stipulated in the Agreement between the ExCom and China. The IA verification collects information on the eligibility of the enterprise for MLF support, the baseline consumption and production facilities, the consumption of HCFCs and alternative technologies during the implementation, production data, destruction of HCFC-based equipment and other issues. The findings of the IA verification will be kept in IA's records and submitted to the Secretariat of the Multilateral Fund along with the progress report and tranche request.

3.3.3 Lessons learned

During the implementation of HPMP, not only had the HCFCs phase-out targets been achieved but extensive experiences had been accumulated, in particularly on the aspects of monitoring, reporting and verification. Key lessons learned are:

- The combination of financial support and specific policy measures employed by HPMP was an effective approach for achieving timely HCFCs phase-out. Conversion projects in Stage-I HPMP with supports from the Multilateral Fund enabled China to request larger enterprises to undertake conversions early and unlock the market for alternatives. The specific policy measures provided enabling environment for the transformation and essential guarantee of a level-playing field.

- The consolidated and coordinated HCFC quota and registration system for HCFC production, consumption, import and export, and the comprehensive monitoring and verification activities ensures the national targets set out in the HPMP Agreement could be achieved. ODS regulation and specific HCFC management circular provides a policy framework for the sustainable phase-out of HCFCs. The tools developed during the implementation such as the on-line production/sales reporting system, on-line import and export management system have provided necessary technical measures for the government for monitoring, verification and data reporting.

- Baseline verifications conducted by third party prior to the signature of sub-projects, performance and financial verifications of the progress milestones during the implementation period ensures the compliance of the beneficiaries to the Multilateral Fund guideline, as well as domestic policy. Qualified and independent accounting firm with support from technical experts as the third-party verification entity provides the transparency and quality guarantee for the verification results. The actual result from Stage I implementation confirms that the verifications conducted are effective, efficient and impartial.

- The registration system managed by the local EEBs plays a critical role for monitoring the use of HCFCs at the local level and particularly for SMEs. This system should be continually strengthened along with the phase-out of HCFCs. The sector with large amounts of SMEs such as the PU foam sector can be monitored with specific inspection tools provided to the local EEBs to strengthen their capacities of the monitoring and enforcement.

- Public awareness on the regulation and policy of HCFC phase-out, requirement of the Montreal Protocol, as well as the related environment and health benefits, are important activities to advance the implementation of HPMP and can facilitate the public supervision for the sustainable phase-out of HCFCs.

- In view of the technical and market challenges of the transformation to the low GWP alternatives, various technical assistance activities, particularly the training to enterprises, standards revision, risk assessment, technical research and studies for the common issues in the transition, public awareness, are very important and necessary to ensure a smooth implementation of HPMP. Special supports to the SMEs should be considered in the implementation of Stage-II HPMP to facilitate the complete transformation of the sectors.

3.4 Management and monitoring for sustainable HCFCs phase-out

3.4.1 HCFCs Import and Export management

ODS Import and Export licensing system serves as a crucial measure under the Montreal Protocol to ensure the consumption compliance of the country. China has promulgated *Management Measures of Import and Export on ODS* in 1999 and then revised in 2014, providing strict import and export approval management measures for ODS in China. The I/E Office is responsible for the approval management of ODS import and export through licensing, quota, and other activities. The I/E Office has also been acting as the coordination institution for ODS import and export control in China, and has played a key role in running license system, approving import and export quota, information exchange, capacity building, enforcement support and regional cooperation. Since 1999， three ministries jointly issued six batches of announcements of the import and export list of controlled ozone depleting substances. In 2004, 31 HCFCs were added to the list and licensed for the import and export. In 2009, 8 HCFCs blends were added to the list for the license management. The import and export management system has been strengthened constantly to meeting the updated requirement of the Montreal Protocol.

According to the Montreal Protocol and HPMP Agreement, the national consumption should be monitored and determined based on production data and official import and export data for the Substances recorded by relevant government departments. To ensure the compliance of the consumption, through coordination, MEE will issue the HCFCs annual production quota and domestic production quota for controlled use for each producer in the beginning of the year. I/E office will determine the import quota of HCFCs in the year. Those quotas will ensure the national consumption is below the target set out in the Agreement. During the year, producers will adjust their actual production plan according to the actual exports of HCFCs so as to avoid exceeding the domestic production quota if the export market declined. Therefore, I/E Office plays the critical role to provide accurate export data to the producers for decision-making. This is a very challenging requirement. However, I/E Office has successfully addressed this challenge by providing an on-line system to the stakeholders.

China is currently the largest HCFC producer in the world, exporting HCFCs to more than 130 countries. The workload of running a HCFC license system is very high. For example, I/E Office reviews HCFC import and export applications for more than 3,500 batches annually, weighing up to about 150,000 tons. The Office also issues import quota for HCFC-123 and HCFC-225 totally around 100 tons annually.

The ODS Import and Export Management Online Approval System was first developed in 2009 which has largely increased approval efficiency for the I/E Office. In 2011, the System was upgraded for the public and traders to review the approval process and supervise the trade information, such as the destination country, port, chemicals and quantities case by case. In 2013, the I/E Office developed the ODS Import and Export Management Fiber-optic Cable Data Transmission System so that the approval data can be tracked in real time by the traders, I/E Office, Ministry of Commerce and Chinese Customs. By doing this, HCFC permits and customs clearance of goods can be monitored in real time. Since 2018, the paperless online system has been developed (Figure 3), and the whole process of paperless approval will be realized in the first quarter of 2019. The implementation of the on-line system not only greatly improved the work efficiency, process publicity, data accuracy, but also facilitated the monitoring, reporting and verification. An independent verification to the import and export data has been done every year through cross checking the data in the on-line system and the records of the producers.

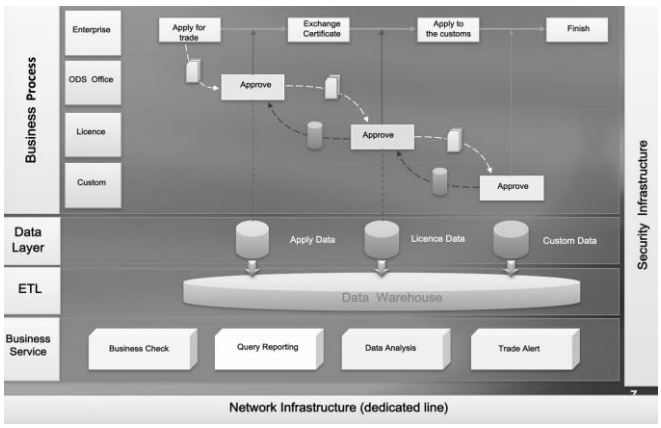

Figure 3. ODS Import and Export Management Online Approval System

To prevent illegal trade, the I/E Office carried out extensive international cooperation and worked closely with UNEP and other countries through iPIC mechanism in daily management. The I/E Office carried out iPIC with other counties approximately 350 times annually, among which 13 applications were denied in the year 2017 (weighing up to 608.6 tons), and 29 were denied in year 2018 (weighing up to 1,571.7 tons) according to the statistical data of iPIC rejection records. Although iPIC brought heavy work load for China import and export management beyond the requirement of the Montreal Protocol, the Government of China was very supportive to the operation of the mechanism in order to address the challenge of illegal trade.

Moreover, China has widely carried out South-South cooperation, exchanging import and export regulatory measures through regional network meetings, actively participating in the bilateral dialogues and responding to the information clarification requested by other countries for the A7 data facilitated by the Ozone Secretariat.

3.4.2 The implementation of MRV and enforcement for the sustainable phase-out

Actions on ODS monitoring and enforcement have been conducted both at the national level by MEE and at the local level by EEBs in the past years. MEE provided guidance for EEBs to conduct regular monitoring and enforcement on ODS. With the reported information on illegal behaviors, MEE usually took actions jointly with relevant local EEBs to crack down on them. MEE also initiated national-level inspections which focuses on key regions, key sectors or key enterprises.

The ODS monitoring program conducted by local EEBs usually consists of (a) regular monitoring and inspections related to general pollutions, and (b) special actions targeting ODS already phased out or still under control.

The regular monitoring and inspections on general pollutions

The regular monitoring and inspections on general pollutions are conducted by local (city/county/district level) EEBs on a regular basis. The local EEBs obtain the lists of enterprises in their regions primarily from the Environmental impact assessment (EIA) registered in the region. EIA is a regulatory requirement applied to all enterprises that want to start new business, which identifies what type of environmental management rules to be followed. The inspectors from the local EEBs focus on whether the production process is in line with the approved process, whether the raw materials used comply with the EIA and environmental regulations, and checks on essential facilities that control the gas emission, water effluent and waste management. The inspectors go through the production logs and other documentations, as well as conduct visual inspection of the production lines and warehouses. In this process,

the inspections also include to check an enterprise's HCFCs quotas or registration information when it is a HCFCs consuming manufacturer. The enterprise shall be punished if it neither applied for quota from MEE, nor did register at provincial EEB. The enterprise shall also be punished if its HCFCs consumption excesses the species or quantity in the issued quotas or information registered on provincial level.

Special actions targeting ODS already phased out or still under control

Special actions targeting ODS already phased out or still under control are usually the joint efforts of different branches under the local EEBs. The air environmental management branch or other branch who owns the ODS management mandates usually takes the lead role, develops work plans and coordinates with other agencies. EEB's monitoring branches are involved to collect samples and test the components in the samples. The enforcement team is in charge of the on-site inspections, and punishes the enterprise that violates the regulations in accordance with the penalties specified in the Regulations.

The special action would first come up with a work plan on targeted enterprises or sectors that will be covered. The enterprise list is compiled from registered HCFCs consumption enterprises, the enterprises with consumption quota issued by MEE, the list of MLF beneficiary enterprises provided by FECO, as well as the information collected from previous surveys and provided by industrial associations. Then the task is conducted by local inspection team organized as above described. The inspectors primarily look into the enterprise's compliance with issued quotas or registered information, visual inspection of production logs, purchase invoices and warehouse accounts. The inspectors may also take samples on-site from production lines, final products, and/or raw material warehouse. The samples are sealed with signature and sent to institutions to test the components. If the beneficiary has completed conversion and passed acceptance, there should be no HCFCs or phased-out ODS detected on-site. Otherwise, it will be imposed on punishment according to the Regulations.

Case 2：The implementation of MRV in Zhejiang Province

Organizational structure and legal basis

A provincial ODS management leadership team has been established in the EEB in Zhejiang Province and is made up of the air and environmental management division, policy and regulation division, enforcement team, the public awareness and education division, and the monitoring and environmental centers. There are about 100 people involved in ODS management in the Province. The air and environmental management division is the lead for ODS management, which is mirrored the same arrangement at the Ministry level.

The basis for all actions on ODS management, specifically HCFCs, is ODS management regulations and policies at the national level, including the MEE regulation on HCFC quota management. Provincial EEBs always in turn interpret and execute them based on their local circumstances. The Zhejiang Provincial EEB accordingly issued an ODS regulation in 2017 that strengthens HCFCs production and consumption management. A series of notices were issued to each city and county level EEB under the new rules.

Registry of HCFC producers and consumers

According to the regulation issued by Zhejiang EEB, all HCFC producers and users across all sectors should be subject to the registration. The registry includes consumption levels as determined by invoices, sales, the application and subsector. All consumers must register regardless of the amount of HCFCs consumption. Sellers and distributors with sales of above 1 MT must also register.

An online registry has been created and put into use whereby all enterprises must log-in to register production and consumption sales (with supporting documentation) by the end of

January of a given year. By 15 February the county level EEBs must complete the verification of uploaded documents and by the end of February, the city level EEBs will have registered enterprises. Information is subsequently publicly disclosed. If an enterprise has not registered in two years and is still producing or using HCFCs, it will be fined.

Under the first phase of the EEB capacity building activity in 2007, lists of HCFC enterprises were already collected, and updated and revised on an ongoing basis. Local EEBs were informed that they must inform new enterprises of this registration system. So far, there are 246 companies registered in Zhejiang Province registry system. FECO has regular communication with local EEBs on the status of conversion sub-projects and it informs EEBs when such sub-projects are completed, with the purpose to extending the list of enterprises to be monitored.

Regular ODS monitoring and enforcement system in Zhejiang

There are around 90 districts and county units and some regions have more enterprises than others so the average number of monitoring and enforcement officers is about five in less concentrated areas and 10-20 persons for more concentrated districts. These officials cover all environmental issues, not just HCFC producing/using companies. There are inspectors at multiple levels; higher levels (MEE, Provincial EEB) can also do spot checks but this usually is for the most urgent or serious issues and high-risk areas. And the regular monitoring and enforcement actions are usually taken place at city or county levels. The method of inspection includes checking production logs as well as financial records to cross check. Business licenses and other documents to prove the enterprise's legality will also be checked. Sample of products/raw materials are collected for testing when needed.

In the past year, all 246 enterprises in the registry and those completed conversion sub-projects were inspected. Zhejiang EEB incorporates ODS monitoring and supervision in the regular monitoring program. The local government provides budget (against a work plan) to regular ODS monitoring and supervision, because it's now a provincial regulation. The regulation states that inspection shall be done at least once a year.

In addition, China's industrial associations take part in monitoring and enforcement actions. The industrial associations play an important role in assisting governments in ODS management and monitoring. The industrial associations have a better understanding of relevant sectors and the market and they have provided information of the sectors and enterprises and technical suggestions for ecology and environment authorities in ODS monitoring and management. Ecology and environment authorities also invite industrial associations and individual experts to participate in enforcement actions to provide on-site technical support. The industrial associations share information with enterprises through various channels and carry out publicity and training. They also launch initiatives to encourage industry self-discipline and provide government departments with clues of illegal behaviors.

3.4.3 Lessons learned

- The capacity buildings carried out for customs officers and dealers in the past have made extensive impact, which effectively strengthened the capacity of ODS import and export management, article inspection, as well as combating ODS illegal trade.
- The iPIC mechanism has effectively prevented illegal trade in the past practice. China will continue to work closely with other countries through the mechanism to effectively combat ODS illegal trade, and further strengthen south-south cooperation and also provide assistance and support in capacity building and alternative technologies.

- Involvement of local EEBs in the management and monitoring of HCFCs phase-out has become extremely important. Local EEBs played key roles in ODS management, particularly in the enforcement area, in order to ensure the sustainability of phase-out impacts.

In the course of the management and monitoring activities conducted by local EEBs, there are some difficulties and challenges identified as well:

- The legal framework on ODS management will need to be further improved through issuing judicial interpretation and revision of the Regulations to provide explanations.
- There are only few qualified institutions that can provide certified testing reports, which are essential for executing enforcement on violating companies. It is expected that more testing centers will become qualified testing institutions soon.
- Even though trainings and work meetings were organized within each province, experience and practice exchanges across regions/provinces are insufficient.
- China will continue to organize training workshops for relevant enterprises and the customs, especially for the customs in the Middle and Western China, in order to continuously strengthen the capacity throughout the country.

4. Enforcement review and action plan

4.1 Enforcement review

4.1.1 Overall situation of Ecology and Environment Protection in China

In recent years, the Government of China made a series of significant strategic deployment on ecological and environmental protection, constructing ecological civilization and building a beautiful China. Ecological civilization and building a beautiful China was included in the amendment to the *Constitution of the People's Republic of China* in 2018. The National Conference on Ecological and Environmental Protection held in May 2018 marks milestone in its history. General Secretary Xi Jinping attended the meeting and delivered an important speech. His thought on ecological civilization is a landmark achievement of the meeting. China has achieved great progress in institution strengthening, law development, environmental inspection, supervision and law enforcement to promote ecological protection.

Institution strengthening through government restructuring. In the latest restructuring, the central government decided to establish the MEE and the law enforcement team for the protection of the ecology and environment protection at all levels. The internal structure of MEE has also been enhanced to achieve a "5 integrations"—integration of surface water and underground water, integration of basins and rivers, integration of land and sea, integration of urban and rural areas, integration of carbon monoxide and carbon dioxide. Central Supervision Office of Ecological and Environmental Protection was set up as an effort to ensure that the central government's decisions on ecological and environmental protection be followed at local levels. The reform on monitoring, supervision and law enforcement departments of the country is being conducted to a deeper level.

Improving legal system. The Government of China has promulgated or amended nearly twenty laws including the *Law on Environmental Protection of the People's Republic of China*,

Law on Prevention and Control of Atmospheric Pollution of the People's Republic of China, *Law on Water Pollution Control and Prevention*, *Environmental Protection Tax Law*, etc. in a bid to implement the strictest management on ecological and environmental protection. *The Law on Environmental Protection*, revised and issued by the National People's Congress in 2014 and came into effect in 2015, formed the basic system of environmental protection in China.(Please find more details in Section 2.2.1)

Intensifying environmental supervision. Central environmental supervision was undertaken in thirty-one provinces, autonomous regions and municipalities in China. In 2018, Central Supervision Office of Ecological and Environmental Protection have carried out operations known as "look back" in altogether 20 provinces. In 2017, 5,600 people participated in the one-year air pollution inspection covering "2+26"cities in Beijing-Tianjin-Hebei region and its vicinity. 231,000 factories and agencies were inspected and 62,000 poorly managed, small and polluting enterprises were rectified or closed down.

Enhancing law enforcement. China has enhanced law enforcement in a more comprehensive way. Since the enforcement of the *Law on Environmental Protectio*n, the number of environmental cases brought to justice by environmental protection authorities in the whole country has witnessed a surge. 186,000 cases of environmental violations were investigated in 2018, with fine worth 15.28 billion yuan, up by 32% from one year earlier or 4.8 times as much as that in 2014 before the new law came into force. Through strict law enforcement, China tackled prominent ecological and environmental issues and cracked down many environmental violations. Pressure to protect environment has been effectively transmitted and the concept of ecological civilization was greatly promoted.

Remarkable progress achieved in overall ecological and environmental protection. Environment quality in China has been substantially improved thus far. Air, water and soil pollution control action plans have made remarkable progress. The targets of the action plan on air protection were fulfilled at the end of 2017 and the action plans on water protection and soil protection are being implemented smoothly. In 2018, PM2.5 concentration in 338 cities at or above prefectural level reduced by 9.3% comparing with previous year. Percentage of surface water better than grade III in the country increased by 3.1% and that of worse than grade V decreased 1.6%.

4.1.2 ODS management and enforcement actions

As a big and responsible developing country, the Government of China has always attached great importance to the implementation of international environmental agreements and taken strict law enforcement to maintain and strengthen our achievements. Since China joined the Montreal Protocol, the MEE and local EEBs have always carried out strict law enforcement, and illegal production, use or sale of ODS have been punished severely. The Government of China has always taken a consistent "zero tolerance" position towards illegal ODS related activities.

MEE continuously strikes illegal ODS behaviors. MEE conducted professional training regularly for law enforcement personnel from local EEBs, focusing on knowledge of ODS as well as introduction of relevant laws, regulations and policies on ODS. Over 50 training sessions were held with a total of about 6,000 personnel trained since 2002. Furthermore, workshops are organized annually to promote communication and experience sharing on ODS management and enforcement among local EEBs, which enhanced local EEB's capacity on supervision and law enforcement for compliance.

With the support of two phases of capacity building projects conducted in 31 provinces and municipalities and 5 cities across China since 2007, the local EEBs carried out a series of

activities and made achievements in terms of establishment of compliance mechanisms, industry and enterprises survey, formulation and implementation of local ODS management policies, supervision and law enforcement, training and public awareness due to the implementation of the projects.

All the provinces and municipalities have established compliance coordination mechanism for ozone layer protection at local government level, most of which are inter-departmental coordination organizations. All the provincial and municipal governments carried out data survey on ODS production and consumption, some also on ODS sales, import and export. The list of enterprises receiving Multilateral Fund assistance was provided by FECO to local EEBs. Besides this, local EEBs has acquired information of more ODS enterprises in their jurisdiction area through survey and registry management system.

New construction projects were strictly controlled through environmental impact assessment approval at local level to ensure that no new ODS production and consumption facilities are approved in China except for feedstock use.

Provincial governments organized training workshops on ODS management and compliance targeting city or county level officers and enterprises. The amount of officers of local EEBs and other relevant authorities which received training exceeded 35,000 and management of enterprises exceeded 13,000. There are various awareness-raising activities on ozone layer protection across the country through internet, television, schools or communities.

Based on the information on illegal ODS behaviors received through the reporting platform and other sources, the ministry and local EEBs took actions jointly to crack down ODS illegal behaviors. To strengthen monitoring of ODS consumption and sales enterprises in the PU foam sector, monitoring projects were initiated in 11 key provinces and cities since 2014. Instant detectors were equipped to local authorities to support monitoring capacity building.

From 2010 to the first half of 2018, 24 cases of illegal production, 44 cases of illegal use, and 5 cases of illegal sale of ODS were investigated and given penalty in China. Among them, there were 14 cases involving illegal production of CFC-11. About 84 tons of illegal CFC-11 were destroyed and production facilities were dismantled. Fines were imposed on four enterprises for illegal use of CFC-11.

Case 3: Cracking down on illegal ODS production

In 2014, according to information received from public, an enforcement team organized by Shandong EEB inspected Xushuo Chemical Company located in Lijin county Dongying city. With investigation conducted, someone rented a workshop of Xushuo Chemical Company and produced ODS illegally. After detection of materials on-site, CTC, CFC-11 and CFC-12 were proved to be contained in the products, which was confirmed as illegal ODS production. There were 18 barrels of CFC-11 (1.2 MT) and 96 barrels of CTC (13.9 MT) on-site. The production facility was destroyed by local government. Materials, products and waste water on-site had been disposed by qualified institutions. The owner of the illegal facility was transferred to the Lijin County Court for trial, which resulted in a fine of 1 million Yuan.

National-wide ODS Law Enforcement Inspection in 2018. Since August 2018, on the basis of regular ODS supervision and law enforcement, MEE organized environmental authorities at provincial and municipal levels across the country to launch a specialized ODS law enforcement inspection. MEE emphasized its “zero tolerance” position towards illegal ODS related activities on various occasions. This specialized inspection, on the one hand, targeted the source by extensively collecting information and tracking down illegal production. Based on clues collected, two illegal CFC-11 production factories located respectively in Liaoning

Province and Henan Province were demolished. On the spot 177.6 tons of production raw materials and 29.9 tons of illegally produced CFC-11 were seized. The raw materials and product were properly sealed up for storage, awaiting accredited entity for treatment. Suspects were transferred to judicial organ for criminal responsibilities. The inspection, on the other hand, targeted the side of ODS use by severely cracking down illegal ODS use and tracking its source. 1,172 related companies were investigated in China, as a result, in some batches of materials in 10 system houses, CFC-11 were identified after detection. Local environmental authorities filed charges and exercised punishment to the involved according to law.

4.1.3 Import and Export management and enforcement actions

The Government of China has attached great attention in combating ODS illegal trade and relevant agencies (MEE, MOFCOM and GAC) collaborated closely to clamp down the illegal import and export activities. China effectively cracked down ODS illegal trade through several special enforcement actions, including “Sky-patching”, “Goddess of the Earth”, “Shield of the Nation”, and “Green Fence Action”. International cooperation has been an important part in the above initiatives to enhance the effectiveness. Through these actions, a batch of illegal trade cases were seized, illegal trades were punished, and licensing system was strengthened. The I/E Office has also set up communication mechanism with Anti-Smuggling Bureau of China Custom, and provided technical support on risk profiling and investigation. To enhance law enforcement capacity of custom officers, the I/E Office and GAC launched the ODS import and export enforcement capacity enhancement project Stage I and Stage II with 14 pilot local customs were selected from 2012 to 2018. Activities under the project include investigation and surveys, training, public awareness and measures to enhance law enforcement etc. 24 training workshops were organized and more than 2,000 customs officers in key customs districts in China were trained. 150 ODS identifiers were provided to local Customs and distributed in main ports in China, which helped Chinese customs officers in detecting illegal ODS shipments effectively. In addition, local customs increased sampling inspection percentage of ODS and its related products, made research on features of illegal ODS trade and strengthened monitoring on key enterprises and products. The projects enhanced ODS knowledge and enforcement capacity of custom officers. With regard to illegal ODS import and export, the 17 illegal cases seized are punished as smuggling offences. Generally, they are sentenced to 1 to 3 years' imprisonment and fined 1 to 3 times of the value of the smuggled goods.

Case4：Huangpu Customs ODS Smuggling Case

On April 15, 2017, Zhuhai Jinying Trading Co., Ltd. entrusted Guangzhou Xuhong Customs Service Co., Ltd. with the customs declaration No. 520120160516128198 to declare a batch of stainless-steel pipes and other goods at Huangpu Laogang Customs. After investigation, the first item of the declared goods was 7,760 kg, while the actual arrival was 2,515 kg (over-reported 5,245 kg); the second item was 5,760 kg, while the actual arrival was 3,760 kg (over-reported 2,000 kg), and 6.12 tons of ARKEMA brand FORANE/R22 was found, which belongs to the ODS regulated under "China Import and Export Controlled Ozone Depleting Substances List". The found ARKEMA brand FORANE/R22 was not declared to the customs and was inconsistent with the declaration.

The party involved in this case has evaded the restrictive provisions on import and export regulation, failing to report the right name of the product. The party exported goods without license and it shall constitute an act of smuggling. The

party involved in this case was sentenced to confiscate the goods and fined three times the value of the goods it smuggled.

4.1.4 Challenges

China has a large area of land with many sectors involving ODS and a long industry chain. Although China has established a comprehensive compliance mechanism and ODS management system, the country is still facing many difficulties and challenges on ODS phase-out.

China has established a sound legal framework on ODS management, however, the punishment of illegal activities is yet to be strengthened for deterrent force. Enhanced measures shall be taken to intensify punishment to the illegal activities.

Ecology and environment authorities faced with some difficulties on ODS enforcement and monitoring. After strengthened monitoring and enforcement activities over years, illegal acts were conducted in a concealed manner, without approval or registration by the government and it is becoming challenging to capture. Simple production process of the specific chemical (CFC-11) and high mobility of the illegal acts, brought difficulties for the enforcement agency to carry out a fixed enforcement plan. Effective enforcement for the hidden small illegal production relied on the precise intelligence and reporting. Internet and logistics provided convenience for illegal trading, which made trading of illegal ODS easier and difficult to trace back. Price fluctuation of the chemicals could induce the activities to violate the regulation. Due to defects of alternative technologies, remote small users who didn't receive technical and financial support to use the alternatives are vulnerable for the illegal supply of the chemicals. In terms of enforcement team, local EEBs undertaken heavy load of work on ecology and environment enforcement and could not be dedicated only for the ODS monitoring.

Due to its particularity, there are only 3 certified ODS testing laboratories in China and most of the environmental monitoring institutions do not have specific ODS monitoring instruments in their own laboratories, which cannot provide adequate support for law enforcement. Monitoring capacity including detectors and detecting institutions need to be strengthened. For the atmospheric measuring, China has developed a comprehensive air quality monitoring network for the normal air pollutants, but the atmospheric measuring on ODS is yet to be established and improved. Evaluation and assessment on ODS phase-out from the emission aspect are difficult to carry out due to lack of historical atmospheric measuring data on ODS emission.

4.2 Action plan to strengthen legislation and its implementation

4.2.1 Further strengthening management on chloromethane enterprises

MEE will continue to strengthen monitoring on chloromethane enterprises with CTC by-production. More systematic and strict monitoring will be implemented and it will be incorporated into the pollution permit management system. Local EEBs will strengthen monitoring and increase inspection frequency on ODS enterprises within their jurisdictional area. A whole process real-time monitoring mechanism will be established at all chloromethane enterprises. Mass flow meters for CTC by-product will be installed, covering CTC measurement in its production, storage, conversion, sales, residual liquid etc. The

mechanism aims to achieve data dynamic balance under the computerized information management of CTC as well as on-line monitoring. MEE has started this work already. In addition, MEE will upgrade MIS system to incorporate feedstock production enterprises to report production data on-line.

4.2.2 Revision of the ODS Law and regulation

MEE will start revision of the Regulations to further enhance its legal effect and improve basis for enforcement. MEE will strengthen cooperation with judicial departments to connect serious illegal ODS behaviors with the criminal law, further intensify punishment on various illegal ODS behaviors and enhance deterrence force.

4.2.3 Strengthening ODS management at all levels

China will continue to strengthen routine monitoring and enforcement on ODS. ODS enforcement is listed in the 2019 work plan of ecology and environment enforcement of MEE and local EEBs that will further strengthen routine monitoring and enforcement on ODS. The government will exert strict monitoring on key industries and enterprises and strengthen inspection on quota implementation and sales of relevant enterprises. Intelligence on illegal behaviors will be widely collected. Reports on any ODS illegal behaviors by the industry or the public are encouraged and illegal behaviors will be cracked down seriously. MEE will strengthen the connection and linkage of the national and local level ODS management to integrate them systematically. Implementation of the Regulations will be improved at the local level including data reporting, registry system and law enforcement etc. MEE will increase training for enforcement personnel at local level on related regulations and policies, ODS professional knowledge, law enforcement and alternative technologies etc. to enhance enforcement capacity.

4.2.4 Measures to strengthening I&E management

Based on two phases of the ODS import and export enforcement capacity building project, Phase III will be launched to conduct cooperative work and enhancing enforcement capacity of the customs. The project will provide synergy law enforcement, technical guidance and information exchange to fight the illegal trade. Training will continue to be conducted, especially targeting form examination and inspection officers and anti-smuggling police on knowledge of goods, international conventions, domestic policies and regulations and common tricks of smuggling to increase the capacity of risk control, inspection and detection and treatment. Handy and safe instant identifiers shall be equipped to make rapid judgment whether it is ODS or not in preliminary detection. Communication with logistic companies will be strengthened to obtain direction of the goods flow and abnormal practices such as change of destinations and goods names. The I/E Office will cooperate with Shanghai Customs Academy to conduct a series of studies on the application of the criminal penalty laws in the processing ODS illegal trade in China. GAC and I/E Office will actively carry out international cooperation including IPIC mechanism, communication and experience sharing, to combat illegal behaviors effectively.

4.2.5 Enhancing ODS monitoring capacity and promote scientific research

In order to enhance monitoring capacity and meet the requirement of intensifying

enforcement, MEE released *the Notice on Constructing Monitoring Laboratory for ODS in industrial products* in 2019 on construction of ODS testing laboratories and establishment of relevant standards and specifications. MEE will establish 6 testing laboratories by the end of 2019 and selected China National Environmental Monitoring Centre, National Research Center for Environmental Analysis and Measurement, Guangdong Environmental Monitoring Center, Shandong Provincial Environment Monitoring Center, Zhejiang Environmental Monitoring Center, Ecological and Environmental Monitoring Center of Chongqing as the 6 laboratories. The laboratories will be equipped with pre-processing and testing facilities and will get certified after construction is completed. Their testing objects are currently considered to be foam products and blowing agents. The detection range of ODS products will be expanded gradually along with the need of the enforcement. In 2020, all the six new laboratories will be put into use to provide judgment basis for enforcement. Meanwhile, MEE will research and develop standards and specifications of ODS testing. Laboratory testing standard and specifications for ODS in industrial products will be formulated and get certified by the end of 2019; on-site rapid testing standard and specifications for ODS in industrial products will be formulated and get certified by the end of 2020. In addition, detection equipment will be provided to local EEBs to improve its enforcement capacities.

MEE will incorporate ODS and HFCs into its monitoring and measuring network of environmental quality to obtain, analyze and evaluate background situation and changing trends of ODS and HFCs, which will provide measuring data and technical support for management and monitoring. MEE will work with China Meteorological Administration and other organizations to jointly develop and share measuring network. Based on the principal of regional representation, minimum mesoscale meteorological cycle, long-term stability and with established necessary infrastructure, establishment of measuring stations will be carried out gradually and comprehensively based on the construction of pilot stations. China will conduct planning and study on the construction of ODS atmospheric measuring network, develop a construction programme based on the results, establish a long-term ODS measuring network step by step (including atmospheric ODS measuring stations in key cities and atmospheric ODS background value measuring stations), with the aims to strengthening the capacity of early alerting and evaluation. Specific construction schedule is as follows: starting from 2020, we will select several key cities to carry out ODS scientific research measuring, aiming for routine measuring within 2 to 3 years. The measuring data would be made available to the scientific research community. Planning and construction of atmospheric ODS background concentration measuring stations will be initiated in 2021.

Ministry of Science and Technology will provide more support for scientific research related to ODS and gradually incorporate it into key science and technology program. Meanwhile, line ministries will also provide more support on science and technology research related to ODS in their respective role.

5. Conclusion

The 82nd ExCom meeting deferred consideration of the funding request of the third tranche of the four sector plans of China's Stage II HPMP. However, based on careful review of the progress report and funding request of the four sector plans before the 82nd ExCom meeting, the MLF Secretariat believed conditions were met for approval of the next tranche according to the Agreement between ExCom and China and recommended approval of the third tranche of the four sector plans. Meanwhile, Stage II of the HPPMP is yet to be fully deliberated since first submitted to the 79th ExCom meeting. Although the bridging funds will serve to address immediate control measures, China is seriously concerned about the great risks for achieving

the 2020 target for HCFC phase-out caused by the deferred approval of annual tranches of the Stage II HPMP and HPPMP.

According to the 2017 A7 data, the total production and consumption of China are respectively 21,671 ODP tons and 14,605 ODP tons, accounting for 74% and 77% of the baseline. None of these sectors has reached the 2020 target. For the consumption sectors, the Agreement of the Stage II of HPMP stipulates that China needs to achieve the 37.6% phase-out of the baseline by 2020. However, the issued quota for domestic use in 2019 is 15,037 ODP tons, and China needs to phase out about 3,265 ODP tons or about 50,000 MT of HCFCs consumption in 2019. For the production sector, the HCFCs production issued in 2019 is 22,742 ODP tons. To achieve the 2020 phase-out target proposed in the Stage II HPPMP, the production sector should phase out 3,800 ODP tons or 76,700 MT in 2019. China is faced with undeniable challenges in achieving this substantial amount of HCFC phase-out without the timely approval and release of the annual tranches.

In addition, all the tranches approved and released under the Stage II HPMP have been committed. Some sectors such as XPS foam sector and solvent sector, have recruited additional enterprises awaiting for signing new conversion contract. Deferring approval of the tranches of the Stage II HPMP seriously affects the momentum of the HCFC phase-out in the sectors. Through this report, China has demonstrated that the monitoring, reporting, verification and enforcement systems have been established since China initialed its ODS phase-out activities, built up and improved overtime, and have been functioning effectively. This report also identifies areas where improvement can be undertaken, and action plans have been presented to strengthen MRV and enforcement, to assure the long-term sustainability of China's phase-out achievements. Considering the current situation, China would like to request that the ExCom approves the annual tranches for Stage II HPMP and Stage II HPPMP at the 83rd meeting to complement and build on China's demonstrated ODS management and enforcement efforts while preventing any potential compliance risk related to HCFC phase-out in 2020.

Regulations on Administration of Ozone Depleting Substances

(Adopted at the 104th Executive Meeting of the State Council on March 24, 2010, promulgated by Decree No. 573 of the State Council of the People's Republic of China on April 8, 2010, and effective as of June 1, 2010)

Chapter I General Provisions

Article 1 These Regulations are formulated in accordance with the Law of the People's Republic of China on the Prevention and Control of Atmospheric Pollution for the purpose of strengthening administration of ozone depleting substances, fulfilling the obligations specified in the Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer, protecting the ozone layer and the ecological environment, and safeguarding human health.

Article 2 The term "ozone depleting substances" in these Regulations means the chemicals that damage the ozone layer and are included in the Catalogue of Controlled Ozone Depleting Substances in China.

The Catalogue of Controlled Ozone Depleting Substances in China shall be compiled, adjusted and published by the competent environmental protection department of the State Council in conjunction with the relevant departments of the State Council.

Article 3 These Regulations apply to such activities as production, sale, use, import and export of ozone depleting substances within the territory of the People's Republic of China.

The term "production" in the preceding paragraph means the activities of manufacturing ozone depleting substances. The term "use" in the preceding paragraph means the production and business activities conducted by using ozone depleting substances, excluding the use of products that contain ozone depleting substances.

Article 4 The competent environmental protection department of the State

Council shall be responsible for unified supervision and administration of ozone depleting substances throughout the country.

The competent commerce department of the State Council, the General Administration of Customs and other relevant departments shall, in accordance with the provisions of these Regulations and in compliance with their functions and duties, be responsible for relevant supervision and administration of ozone depleting substances.

The competent environmental protection departments, the competent commerce departments and other relevant departments of local people's governments at or above the county level shall, in accordance with the provisions of these Regulations and in compliance with their functions and duties, be responsible for relevant supervision and administration of ozone depleting substances within their respective administrative areas.

Article 5 The State shall gradually reduce and finally phase out ozone depleting substances used as refrigerants, blowing agents, extinguishing agents, solvents, cleaning agents, process agents, pesticides, aerosols, expansion agents, etc.

The competent environmental protection department of the State Council shall, in conjunction with the relevant departments of the State Council, draft the China's Country Program for Ozone Depleting Substances Phase-out (hereinafter referred to as the Country Program) and submit the same to the State Council for approval before implementation.

Article 6 The competent environmental protection department of the State Council shall, based on the Country Program and the progress in the phase-out of ozone depleting substances and in conjunction with the relevant departments of the State Council, decide on and make public the types of construction, alteration or expansion projects for producing or using ozone depleting substances, which are subject to restriction or prohibition, and shall compile and make public the catalogue of ozone depleting substances the production, use, import or export of which is subject to restriction or prohibition.

Where, for special purposes, there is a real need to produce or use ozone

depleting substances the production or use of which is subject to restriction or prohibition as specified in the preceding paragraph, the matter shall be subject to approval by the competent environmental protection department of the State Council in conjunction with the relevant departments of the State Council in accordance with the provisions of the Montreal Protocol on Substances that Deplete the Ozone Layer on permitting the use of ozone depleting substances for special purposes.

Article 7 The State exercises control over the total amounts and quotas in respect of ozone depleting substances to be produced, used, imported and exported. Based on the Country Program and the progress in the phase-out of ozone depleting substances, the competent environmental protection department of the State Council shall, in consultation with the relevant departments of the State Council, decide on and make public the national total annual amounts of quotas for production, use, import and export of ozone depleting substances.

Article 8 The State encourages and supports scientific research, technological development, and wide use of alternatives to ozone depleting substances and alternative technologies.

The competent environmental protection department of the State Council shall, in conjunction with the relevant departments of the State Council, compile, adjust and make public the Catalogue of Recommended Alternatives to Ozone Depleting Substances in China.

Development, production and use of alternatives to ozone depleting substances shall comply with industrial policies of the State and enjoy preferential policies in accordance with the relevant provisions of the State. The State shall reward the units and individuals that have made outstanding achievements in phasing out ozone depleting substances.

Article 9 All units and individuals have the right to report violations of these Regulations to the competent environmental protection departments or other relevant departments of people's governments at or above the county level. The department receiving the report shall investigate and handle such a violation in a timely manner and maintain the confidentiality of the reporting person, and shall reward him if the

reported violation is ascertained through investigation.

Chapter II Production, Sale and Use

Article 10 A unit that is to produce or use ozone depleting substances shall, in accordance with the provisions of these Regulations, apply for a quota permit for the production or use. However, any of the following units that use ozone depleting substances is not required to apply for a quota permit for the use:

(1) maintenance shops that use ozone depleting substances for maintenance and repair of refrigeration equipment or a refrigeration system or fire extinguishing system;

(2) laboratories that use a small amount of ozone depleting substances for experimental analysis;

(3) entry-exit inspection and quarantine agencies that use ozone depleting substances for quarantine purposes to prevent the in- or out-flow of harmful organisms; or

(4) other units that are not required to apply for a quota permit for the use, as is specified by the competent environmental protection department of the State Council.

Article 11 A unit that produces or uses ozone depleting substances shall meet the following requirements, apart from those specified by laws and administrative regulations:

(1) having a record of lawful production or use of the relevant ozone depleting substances;

(2) having the premises, facilities, equipment and professional technicians for production or use of the relevant ozone depleting substances;

(3) having the environmental protection facilities that pass the acceptance check by the competent environmental protection department; and

(4) having a sound management system for production and business operations.

The provisions of subparagraph (1) of the preceding paragraph shall not apply to units that use ozone depleting substances for special purposes specified in Article 6 of

these Regulations.

Article 12 A unit that produces or uses ozone depleting substances shall, prior to October 31 of each year, apply in writing to the competent environmental protection department of the State Council for a production or use quota for the following year, and submit documentary evidence of its compliance with the requirements specified in Article 11 of these Regulations.

The competent environmental protection department of the State Council shall, based on the national total annual quotas for production and use of ozone depleting substances and the applicant's record of production or use of the relevant ozone depleting substances, determine the production or use quota to be allocated to the applicant for the following year and complete the examination of the application prior to December 20 of each year. The said department shall issue a quota permit for production or use for the following year to an applicant that complies with the requirements, which shall be announced and copies of which shall be sent to the relevant departments of the State Council and to the competent environmental protection department of the people's government of the province, autonomous region or municipality directly under the Central Government where the applicant is located; if an applicant fails to comply with the requirements, the said department shall inform the applicant of the fact and the reasons in writing.

Article 13 A quota permit for production or use of ozone depleting substances shall specify the following particulars:

(1) name, address, and legal representative or responsible person of the unit that produces or uses ozone depleting substances;

(2) type, purpose and amount of ozone depleting substances permitted to be produced or used;

(3) term of validity; and

(4) permit-issuing authority, date of issue and serial number of the permit.

Article 14 Where a unit that produces or uses ozone depleting substances needs adjustment in its quota, it shall apply to the competent environmental protection department of the State Council for quota alteration.

The competent environmental protection department of the State Council shall examine the application in accordance with the requirements and on the basis specified in Articles 11 and 12 of these Regulations and complete the examination within 20 working days from the date of acceptance of the application. If the applicant complies with the requirements, the said department shall make adjustment to its quota and announce such adjustment; if the applicant fails to comply with the requirements, the said department shall inform the applicant of the fact and the reasons in writing.

Article 15 A unit that produces ozone depleting substances shall not produce ozone depleting substances beyond the type, amount or term of validity specified in its quota permit for the production, and shall not produce or sell ozone depleting substances beyond the purpose specified in the said permit.

Producing ozone depleting substances without a quota permit for the production is prohibited.

Article 16 A unit that has obtained a quota permit for use in accordance with the provisions of these Regulations shall not use ozone depleting substances beyond the type, purpose, amount or term of validity specified in the said permit.

Using ozone depleting substances without a quota permit for the use is prohibited, with the exception of the units that are not required to apply for a quota permit for use, as specified in Article 10 of these Regulations.

Article 17 A unit that sells ozone depleting substances shall go through the formalities for the record as prescribed by the competent environmental protection department of the State Council.

The competent environmental protection department of the State Council shall announce the name list of the units that have been kept on record for selling ozone depleting substances.

Article 18 Purchasing and selling of ozone depleting substances shall only be conducted between the units that meet the requirements of these Regulations for producing, selling or using ozone depleting substances, with the exception of import and export of ozone depleting substances in accordance with the provisions of these

Regulations.

Article 19 A unit engaged in such business activities as maintenance, repair or scrapping treatment of refrigeration equipment or a refrigeration system or fire extinguishing system that contains ozone depleting substances shall apply for the record with the competent environmental protection department of the people's government at the county level of the place where it is located.

A unit specially engaged in such business activities as recovery, reclamation or destruction of ozone depleting substances shall apply for the record with the competent environmental protection department of the people's government of the province, autonomous region or municipality directly under the Central Government where it is located.

Article 20 A unit that produces or uses ozone depleting substances shall take the necessary measures to prevent or reduce the leakage and discharge of ozone depleting substances as prescribed by the competent environmental protection department of the State Council.

A unit engaged in such business activities as maintenance, repair or scrapping treatment of refrigeration equipment or a refrigeration system or fire extinguishing system that contains ozone depleting substances shall, as prescribed by the competent environmental protection department of the State Council, recover or recycle ozone depleting substances or hand them over to a unit engaged in such business activities as recovery, reclamation or destruction of ozone depleting substances for environmentally sound disposal.

A unit engaged in such business activities as recovery, reclamation or destruction of ozone depleting substances shall carry out environmentally sound disposal of ozone depleting substances as prescribed by the competent environmental protection department of the State Council and shall not discharge them directly.

Article 21 A unit engaged in such business activities as production, sale, use, recovery, reclamation or destruction of ozone depleting substances, or maintenance, repair or scrapping treatment of refrigeration equipment or a refrigeration system or fire extinguishing system that contains ozone depleting substances shall keep intact

the original materials about its production and business activities for at least three years and submit the relevant data as prescribed by the competent environmental protection department of the State Council.

Chapter III Import and Export

Article 22 The State exercises control over import and export of ozone depleting substances and carry out catalogue management. The competent environmental protection department of the State Council shall, in conjunction with the competent commerce department of the State Council and the General Administration of Customs, formulate, adjust and make public the Catalogue of Ozone Depleting Substances Under Import and Export Control in China.

A unit that imports or exports ozone depleting substances included in the Catalogue of Ozone Depleting Substances Under Import and Export Control in China shall, in accordance with the provisions of these Regulations, apply to the national authority in charge of import and export of ozone depleting substances for quotas and the approval certificate for import or export of ozone depleting substances, and submit the materials about the type, amount, source and purpose of ozone depleting substances to be imported or exported.

Article 23 The national authority in charge of import and export of ozone depleting substances shall complete the examination of an application within 20 working days from the date of acceptance of the application and make a decision to approve or not to approve the application. If it decides to approve the application, it shall issue to the applicant an approval certificate for import or export; if it decides not to approve the application, it shall inform the applicant of the fact and the reasons in writing.

An approval certificate for import or export shall be valid for a term of not longer than 90 days, and shall not be used after the expiry date or carried over to the following year.

Article 24 A unit that has obtained an approval certificate for import or

export of ozone depleting substances shall, as prescribed by the competent commerce department of the State Council, apply for an import or export license and go through customs clearance formalities on the basis of the license. Ozone depleting substances included in the Catalogue of Entry-Exit Goods Under Inspection and Quarantine by Entry-Exit Inspection and Quarantine Agencies shall be subject to inspection conducted by the entry-exit inspection and quarantine agency in accordance with law.

Where ozone depleting substances are to be brought in from abroad to special customs surveillance zones or bonded facilities under surveillance within the territory of the People's Republic of China or vice versa, the import and export unit shall, in accordance with the provisions of these Regulations, apply for an approval certificate for import or export and an import or export license; where ozone depleting substances are to be brought in to special customs surveillance zones or bonded facilities under surveillance within the territory of the People's Republic of China from other places within the Chinese territory or vice versa, or move between the said zones and facilities, an approval certificate for import or export and an import or export license are not required.

Chapter IV Supervision and Inspection

Article 25 The competent environmental protection departments and other relevant departments of people's governments at or above the county level shall, in accordance with the provisions of these Regulations and in compliance with their functions and duties, supervise and inspect such activities as production, sale, use, import and export of ozone depleting substances.

Article 26 When conducting supervision and inspection, the competent environmental protection departments and other relevant departments of people's governments at or above the county level have the power to take the following measures:

(1) to require the unit under inspection to provide relevant materials;

(2) to require the unit under inspection to give an account of its implementation

of these Regulations;

(3) to enter the production, operation and storage premises of the unit under inspection to conduct investigation and collect evidence;

(4) to order the unit under inspection to cease and desist from violating these Regulations and fulfill its statutory obligations; and

(5) to impound or seal up ozone depleting substances that are illegally produced, sold, used, imported or exported, as well as the production equipment, facilities, raw materials and products.

The unit under inspection shall render cooperation, give truthful information and provide the necessary materials, and shall not reject or obstruct the inspection.

Article 27 When conducting supervision and inspection, the competent environmental protection departments and other relevant departments of people's governments at or above the county level shall send not less than two inspectors, who shall show their valid law enforcement credentials.

Staff members of the competent environmental protection departments and other relevant departments of people's governments at or above the county level are obligated to keep confidential the commercial secrets that they come to know in the course of supervision and inspection.

Article 28 The competent environmental protection department of the State Council shall establish a sound management system for data and information concerning ozone depleting substances, in order to collect, pool and make public the data and information about production, use, import and export of ozone depleting substances.

The competent environmental protection departments of local people's governments at or above the county level shall report on violations of these Regulations discovered in the course of supervision and inspection and their handling of the same, level by level, up to the competent environmental protection department of the State Council.

Other relevant departments of local people's governments at or above the county level shall report on violations of these Regulations discovered in the course of

supervision and inspection and their handling of the same, level by level, up to the relevant departments of the State Council, which shall send a copy of the reports to the competent environmental protection department of the State Council in a timely manner.

Article 29 Where the competent environmental protection department or any other relevant department of a local people's government at or above the county level fails to investigate and handle a violation of these Regulations, the competent department at a higher level has the power to order the former department to investigate and handle the violation in accordance with law, or directly investigate and handle the violation itself.

Chapter V Legal Liability

Article 30 Where a department responsible for supervision and administration of ozone depleting substances or a staff member thereof commits one of the following acts, the person in charge with competent accountability and other persons with competent accountability shall be given a sanction in accordance with law, and if their acts constitute crimes, they shall be investigated for criminal liability in accordance with law:

(1) issuing a quota permit for production or use of ozone depleting substances in violation of the provisions of these Regulations;

(2) issuing an approval certificate or license for import or export of ozone depleting substances in violation of the provisions of these Regulations;

(3) failing to investigate and handle discovered violations of these Regulations in accordance with law;

(4) extorting or accepting money or things of value from another person or seeking other benefits when handling procedures for granting administrative licensing for production, use, import or export of ozone depleting substances or when conducting supervision and inspection; or

(5) otherwise committing illegalities for personal gain, abusing its/his power or

neglecting its/his duty.

Article 31 Where a unit produces ozone depleting substances without a quota permit for the production, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to cease and desist from such illegal production, confiscate the raw materials used therefor, ozone depleting substances illegally produced and the illegal income thereof, dismantle and destroy the equipment and facilities for illegal production, and concurrently impose on it a fine of 1,000,000 yuan.

Article 32 Where a unit that is required to apply for a quota permit for use in accordance with the provisions of these Regulations uses ozone depleting substances without such a permit, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to cease and desist from such illegal use, confiscate ozone depleting substances in illegal use, the products resulting from such illegal use and the illegal income thereof, and concurrently impose on it a fine of 200,000 yuan; if the circumstances are serious, a fine of 500,000 yuan shall be imposed concurrently and the equipment and facilities for illegal use shall be dismantled or destroyed.

Article 33 Where a unit that produces or uses ozone depleting substances commits one of the following acts, the competent environmental protection department of the people's government of the province, autonomous region or municipality directly under the Central Government where it is located shall order it to cease and desist from such illegal act, confiscate ozone depleting substances illegally produced or in illegal use, the products resulting from such illegal use and the illegal income thereof, concurrently impose on it a fine of not less than 20,000 yuan but not more than 100,000 yuan, and report the matter to the competent environmental protection department of the State Council, which shall reduce the unit's production or use quota; if the circumstances are serious, a fine of not less than 100,000 yuan but not more than 200,000 yuan shall be imposed concurrently and the matter shall be reported to the competent environmental protection department of the State Council, which shall revoke the unit's quota permit for the production or use:

(1) producing ozone depleting substances beyond the type, amount or term of validity specified in its quota permit for the production;

(2) producing or selling ozone depleting substances beyond the purpose specified in its quota permit for the production; or

(3) using ozone depleting substances beyond the type, amount, purpose or term of validity specified in its quota permit for the use.

Article 34 Where a unit that produces, sells or uses ozone depleting substances sells or purchases ozone depleting substances to or from a unit that does not comply with the requirements of these Regulations, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to make corrections, confiscate ozone depleting substances for illegal sale or illegally purchased and the illegal income thereof, and impose on it a fine three times the total market value of ozone depleting substances sold or purchased; in the case of a unit that has obtained a quota permit for the production or use, the matter shall be reported to the competent environmental protection department of the State Council, which shall reduce its production or use quota.

Article 35 Where a unit that produces or uses ozone depleting substances fails to take the necessary measures to prevent or reduce the leakage or discharge of ozone depleting substances as required, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to make corrections within a specified time limit and impose on it a fine of 50,000 yuan; if the unit fails to make corrections within the specified time limit, a fine of 100,000 yuan shall be imposed, and the matter shall be reported to the competent environmental protection department of the State Council, which shall reduce its production or use quota.

Article 36 Where a unit engaged in such business activities as maintenance, repair or scrapping treatment of refrigeration equipment or a refrigeration system or fire extinguishing system that contains ozone depleting substances fails to recover or recycle ozone depleting substances or hand them over to a unit engaged in such

business activities as recovery, reclamation or destruction of ozone depleting substances for environmentally sound disposal as required, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to make corrections and impose on it a fine three times the costs of environmentally sound disposal.

Article 37 Where a unit engaged in such business activities as recovery, reclamation or destruction of ozone depleting substances fails to conduct environmentally sound disposal of ozone depleting substances as required but discharges them directly into the air, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to make corrections and impose on it a fine three times the costs of environmentally sound disposal.

Article 38 Where a unit engaged in such business activities as production, sale, use, import, export, recovery, reclamation or destruction of ozone depleting substances, or maintenance, repair or scrapping treatment of refrigeration equipment or a refrigeration system or fire extinguishing system that contains ozone depleting substances, commits one of the following acts, the competent environmental protection department of the local people's government at or above the county level of the place where it is located shall order it to make corrections and impose on it a fine of not less than 5,000 yuan but not more than 20,000 yuan:

(1) failing to apply for the record with the competent environmental protection department as required by these Regulations;

(2) failing to keep intact the original materials about its production and business activities as required;

(3) failing to submit in time the data about its business activities, or making a false report or concealing the facts thereon; or

(4) failing to provide the necessary materials as required by supervisors and inspectors.

Article 39 Where a unit rejects or obstructs supervision and inspection conducted by the competent environmental protection department or other relevant

departments, or practices fraud when under supervision and inspection, the supervision and inspection department shall order it to make corrections and impose on it a fine of not less than 10,000 yuan but not more than 20,000 yuan; if such act constitutes a violation against public security administration, the public security organ shall impose a public security administration penalty in accordance with law; if such act constitutes a crime, criminal liability shall be investigated for in accordance with law.

Article 40 Where an import or export unit imports or exports ozone depleting substances without an import or export license or does so beyond the requirements specified in the import or export license, the customs shall impose on it a penalty in accordance with the provisions of the relevant laws and administrative regulations; if a crime is constituted, criminal liability shall be investigated for in accordance with law.

Chapter VI Supplementary Provision

Article 41 These Regulations shall be effective as of June 1, 2010.

Annex X

UPDATED AGREEMENT BETWEEN THE GOVERNMENT OF CHINA AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS

1. This Agreement represents the understanding of the Government of China (the "Country") and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A ("The Substances") to a sustained level of 16,978.9 ODP tonnes by 1 January 2015 in compliance with Montreal Protocol schedules.

2. The Country agrees to meet the annual consumption limits of the Substances as set out in row 1.2 ("Maximum allowable total consumption of Annex C, Group I substances") of Appendix 2-A ("The Targets, and Funding") in this Agreement as well as in the Montreal Protocol reduction schedule for all Substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of the Substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances that exceeds the level defined in rows 4.1.3, 4.2.3, 4.3.3, 4.4.3. 4.5.3, and 4.6.3 (remaining eligible consumption).

3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A ("The Targets, and Funding") to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A ("Funding Approval Schedule").

4. The Country agrees to implement this Agreement in accordance with the HCFC phase-out sector plans submitted and the commitments specified in Appendix 8-A. In accordance with sub-paragraphs 5(a)(ii) and 5(b)(i) of this Agreement, the Country will accept independent verification of completion of the conversion of manufacturing capacity as well as achievement of the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A of this Agreement.

5. The Executive Committee will not provide the Funding in accordance with the Funding Approval Schedule unless the Country satisfies the following conditions at least eight weeks[1] in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:

(a) For the release of any tranche:

(i) That the Country had met the Targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years since the year in which this Agreement was approved. Years for which no obligation for reporting of country programme data exists at the date of the Executive Committee meeting at which the funding request is being presented are exempted;

(ii) That the meeting of these Targets has been independently verified, unless the Executive Committee decided that such verification would not be required; and

(iii) That, for all submissions from the 68th Meeting onwards, confirmation has been

[1] Tranches with requested level of funding of more than US $5 million should be submitted in full 12 weeks in advance to the applicable Executive Committee meeting in line with decision 20/7.

received from the Government that an enforceable national system of licensing and quotas for HCFC imports and, where applicable, production and exports is in place and that the system is capable of ensuring the Country's compliance with the Montreal Protocol HCFC phase-out schedule for the duration of this Agreement;

(b) Conditions to be met as a precondition for the release of tranches for a sector plan:

(i) For sector plans with activities that include the conversion of manufacturing capacity, the Country has submitted a verification report of a random sample of at least 5 per cent of the manufacturing lines which had completed their conversion in the year to be verified, on the understanding that the total aggregated HCFC consumption of the random sample of the manufacturing lines represents at least 10 per cent of the sector consumption phased out in that year;

(ii) That the Country had submitted annual implementation reports in the form of Appendix 4-A ("Format of Implementation Reports and Plans") covering each previous calendar year; that it had achieved a significant level of implementation of activities initiated with previously approved tranches; and that the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and

(iii) That the Country has submitted an annual implementation plan for the respective sector in the form of Appendix 4-A ("Format of Implementation Reports and Plans") covering each calendar year until and including the year for which the funding schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement, and will also establish and maintain a system to monitor the consumption in the different sectors, to ensure compliance with the sector consumption limits set out in rows 1.3.1, 1.3.2, 1.3.3, 1.3.4 and 1.3.5 of Appendix 2-A. The institutions set out in Appendix 5-A ("Monitoring Institutions and Roles") will monitor and report on implementation of the activities in the previous annual implementation plans in accordance with their roles and responsibilities set out in Appendix 5-A. This monitoring will also be subject to independent verification as described in paragraph 4 above.

7. The Executive Committee agrees that the Country may have the flexibility to reallocate the approved funds, or part of the funds, within the funding foreseen for each sector according to the evolving circumstances to achieve the smoothest reduction of consumption and phase-out of the Substances specified in Appendix 1-A:

(a) Should the Country decide during implementation of this Agreement to introduce alternative technologies other than those proposed in the sector plans submitted, or implement differently as proposed in those sector plans, this would require approval of those changes as part of an annual implementation plan. The documentation can also be provided as part of a revision to an existing annual implementation plan, to be submitted eight weeks prior to any meeting of the Executive Committee. Such a request would include a description of the changes in activities to implement the new alternative technology, the calculation of the associated incremental costs and the impact on the climate. The Country agrees that potential savings in incremental costs related to the change of technology would decrease the overall funding level under this Agreement accordingly;

(b) Reallocations categorized as major changes must be documented in advance in an Annual Implementation Plan and approved by the Executive Committee as described in sub-paragraph 5(b)(iii) above. The documentation can also be provided as part of a revision to an existing annual implementation plan, to be submitted eight weeks prior to any meeting of the Executive Committee. Major changes would relate to:

(i) Issues potentially concerning the rules and policies of the Multilateral Fund;

(ii) Modifications to any clause in this Agreement;

(iii) Changes in the annual levels of funding allocated to individual bilateral or implementing agencies for the different tranches on a sector level;

(iv) Provision of funding for programmes or activities not included in the current endorsed annual implementation plan with a cost greater than 20 per cent of the total cost of the last approved tranche or US $2.5 million, whichever is lower; and

(v) Removal of activities in the annual implementation plan with a cost greater than 20 per cent of the total cost of the last approved tranche or US $2.5 million, whichever is lower;

(c) Reallocations not categorized as major changes may be incorporated in the approved annual implementation plan, under implementation at the time, and reported to the Executive Committee in the subsequent annual implementation report; and

(d) Any remaining funds will be returned to the Multilateral Fund upon completion of the last tranche of the Agreement.

8. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNDP has agreed to be the lead implementing agency (the "Lead IA"), and the Government of Germany, the Government of Japan, UNIDO, UNEP and the World Bank have agreed to be cooperating agencies ("Cooperating IAs) in respect of the Country's activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of any of the agencies taking part in this Agreement.

9. The Lead IA will be responsible for ensuring co-ordinated planning, implementation and reporting of all activities under this Agreement across all relevant sectors, including but not limited to independent verification as per sub-paragraph 5(b)(i), and implementing the activities related to the role as the Lead IA described in Appendix 6-A and the activities as a sector Lead IA described in Appendix 6-B. UNIDO and UNEP will be responsible for carrying out the activities in the respective Sector Plans described in Appendices 6-C and 6-F, respectively, and their subsequent revisions as per sub-paragraph 5(b)(iii) and paragraph 7. The World Bank will be responsible for carrying out the independent verification as per sub-paragraph 5(a)(ii), and implementing additional activities regarding its role as a sector Lead IA described in Appendix 6-E. The Governments of Germany and Japan as the "Cooperating IAs" will be responsible for carrying out the activities described in Appendices 6-D and 6-G. The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IAs with the fees set out in rows 2.1.2, 2.2.2, 2.2.4, 2.3.2, 2.4.2, 2.5.2, 2.5.4, 2.6.2 and 2.7.2 of Appendix 2-A.

10. Should the Country, for any reason, not meet the Targets for the elimination of the Substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amount set out in Appendix 7-A in respect of each ODP kg of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement, and take related decisions. Once these decisions are taken, this specific case will not be an impediment for future tranches as per paragraph 5 above.

11. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decision that may affect the funding of any other consumption sector projects or any other related activities in the Country.

12. The Country will comply with any reasonable request of the Executive Committee, the Lead IA, the sector Lead IAs and the Cooperating IAs to facilitate implementation of this Agreement. In particular, it will provide the Lead IA, the sector Lead IAs and the Cooperating IAs with access to the information necessary to verify compliance with this Agreement.

13. The completion of stage I of the HPMP and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption level has been specified in Appendix 2-A. Should there at that time still be activities that are outstanding, and which were foreseen in the Sector Plan, and its subsequent revisions as per sub-paragraph 5(b)(iii) and paragraph 7, the completion will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per sub-paragraphs 1(a), (b), (d), (e) and (g) of Appendix 4-A will continue until the time of the completion unless otherwise specified by the Executive Committee.

14. All of the conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

15. This updated Agreement supersedes the Agreement reached between the Government of China and the Executive Committee at the 65th meeting and its revised Appendix 5-A approved at the 66th meeting of the Executive Committee.

APPENDICES

APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	11,495.31
HCFC-123	C	I	10.13
HCFC-124	C	I	3.07
HCFC-141b	C	I	5,885.18
HCFC-142b	C	I	1,470.53
HCFC-225	C	I	1.22
Total			18,865.44

APPENDIX 2-A: THE TARGETS, AND FUNDING

		2011	2012	2013	2014	2015	Total
Consumption targets							
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	n/a	n/a	19,269.0	19,269.0	17,342.1	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	n/a	n/a	18,865.4	18,865.4	16,978.9	n/a
1.3.1	Maximum allowable consumption of Annex C, Group I substances in the ICR sector (ODP tonnes)	n/a	n/a	2,402.8	2,402.8	2,162.5	n/a
1.3.2	Maximum allowable consumption of Annex C, Group I substances in the XPS foam sector (ODP tonnes)	n/a	n/a	2,540.0	2,540.0	2,286.0	n/a
1.3.3	Maximum allowable consumption of Annex C, Group I substances in the PU foam sector (ODP tonnes)	n/a	n/a	5,392.2	5,392.2	4,449.6	n/a
1.3.4	Maximum allowable consumption of Annex C, Group I substances in the RAC sector (ODP tonnes)	n/a	n/a	4,108.5	4,108.5	3,697.7	n/a
1.3.5	Maximum allowable consumption of Annex C, Group I substances in the solvent sector	n/a	n/a	494.2	494.2	455.2	n/a
Funding industrial and commercial refrigeration and air conditioning (ICR) sector plan							
2.1.1	Sector Lead IA (UNDP) agreed funding (US $)	25,380,000	6,900,000	8,495,000	11,075,000	9,150,000	61,000,000
2.1.2	Support costs for UNDP (US $)	1,903,500	483,000	594,650	775,250	640,500	4,396,900
Funding extruded polystyrene (XPS) foam sector plan							
2.2.1	Sector Lead IA (UNIDO) agreed funding (US $)	21,372,000	10,217,000	3,998,000	6,330,000	6,733,000	48,650,000
2.2.2	Support costs for UNIDO (US $)	1,602,900	715,190	279,860	443,100	471,310	3,512,360
2.2.3	Sector cooperating agency (Germany) agreed funding (US $)	459,023	390,977	-	-	500,000	1,350,000
2.2.4	Support costs for Germany (US $)	51,260	47,059	-	-	60,181	158,500
Funding polyurethane rigid (PU) foam sector plan							
2.3.1	Sector Lead IA (World Bank) agreed funding (US $)	38,859,000	5,520,000	13,592,000	4,079,000	10,950,000	73,000,000
2.3.2	Support costs for World Bank (US $)	2,914,000	386,400	951,440	285,530	766,500	5,303,870
Funding room air conditioning (RAC) sector plan							
2.4.1	Sector Lead IA (UNIDO) agreed funding (US $)	36,430,000	9,200,000	8,495,000	9,625,000	11,250,000	75,000,000
2.4.2	Support costs for UNIDO (US $)	2,732,250	644,000	594,650	673,750	787,500	5,432,150
Funding service sector plan, including enabling programme							
2.5.1	Sector Lead IA (UNEP) agreed funding (US $)	1,579,000	598,000	1,104,000	1,173,000	786,000	5,240,000
2.5.2	Support costs for UNEP (US $)	176,703	66,921	123,547	131,269	87,960	586,400
2.5.3	Sector cooperating agency (Japan) agreed funding (US $)	80,000	80,000	80,000	80,000	80,000	400,000
2.5.4	Support costs for Japan (US $)	10,400	10,400	10,400	10,400	10,400	52,000
Funding national co-ordination							
2.6.1	Overall Lead IA (UNDP) agreed funding (US $)	360,000	-	-	-	-	360,000
2.6.2	Support costs for UNDP (US $)	27,000	-	-	-	-	27,000
Funding solvent sector plan							
2.7.1	Overall Lead IA (UNDP) agreed funding (US $)	2,500,000	0	2,000,000	0	500,000	5,000,000
2.7.2	Support costs for UNDP (US $)	187,500	0	140,000	0	35,000	362,500
Overall funding							
3.1	Total agreed funding (US $)	127,019,023	32,905,977	37,764,000	32,362,000	39,949,000	270,000,000
3.2	Total support cost (US $)	9,605,513	2,352,970	2,694,547	2,319,299	2,859,351	19,831,680
3.3	Total agreed costs (US $)	136,624,536	35,258,947	40,458,547	34,681,299	42,808,351	289,831,680

APPENDIX 2-A: THE TARGETS, AND FUNDING - continuation

Phase-out and remaining eligible consumption		
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)	1,443.73
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)*	35.99
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)	10,015.59
4.2.1	Total phase-out of HCFC-123 agreed to be achieved under this Agreement (ODP tonnes)	0.00
4.2.2	Phase-out of HCFC-123 to be achieved in previously approved projects (ODP tonnes)	0.00
4.2.3	Remaining eligible consumption for HCFC-123 (ODP tonnes)	10.13
4.3.1	Total phase-out of HCFC-124 agreed to be achieved under this Agreement (ODP tonnes)	0.00
4.3.2	Phase-out of HCFC-124 to be achieved in previously approved projects (ODP tonnes)	0.00
4.3.3	Remaining eligible consumption for HCFC-124 (ODP tonnes)	3.07
4.4.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)	1,681.29
4.4.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)**	16.71
4.4.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)	4,187.18
4.5.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)	260.81
4.5.2	Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes)***	6.66
4.5.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)	1,203.06
4.6.1	Total phase-out of HCFC-225 agreed to be achieved under this Agreement (ODP tonnes)	0.00
4.6.2	Phase-out of HCFC-225 to be achieved in previously approved projects (ODP tonnes)	0.00
4.6.3	Remaining eligible consumption for HCFC-225 (ODP tonnes)	1.22

* Associated with previously approved funding not included in row 3 of US $ 12,081,951, including a compressor manufacturing conversion project and 50 per cent of the funding for an XPS project with consumption in HCFC-22 and HCFC-142b

** Associated with previously approved funding not included in row 3 of US $ 2,753,079

*** Associated with previously approved funding not included in row 3 of US $ 986,650, including 50 per cent of the funding for an XPS project with consumption in HCFC-22 and HCFC-142b

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. The Funding Approval Schedule consists of several tranches. Under this Agreement, a tranche is defined as the funding set out in each year for each sector plan or the national co-ordination, respectively, as specified in Appendix 2-A.

2. Funding for the future tranches will be considered for approval at the last meeting of the year specified in Appendix 2-A.

APPENDIX 4-A: FORMAT OF IMPLEMENTATION REPORTS AND PLANS

1. The Lead IA, on behalf of the Country, will submit at least eight weeks[2] prior to the third meeting of the Executive Committee in any given year, for consideration at that meeting, the following reports to the Multilateral Fund Secretariat:

(a) A verification report of the consumption of each of the Substances mentioned in Appendix 1-A, as per sub-paragraph 5(a)(ii) of the Agreement. If not otherwise decided by the Executive Committee, such a verification has to be provided together with each tranche request and will include verification of the consumption for all relevant years as specified in sub-paragraph 5(a)(i) of the Agreement for which a verification report has not yet been acknowledged by the Committee;

(b) For each sector plan a narrative report, with data provided by calendar year, regarding the progress since the year prior to the previous report, reflecting, for each sector, the situation of the Country in regard to phase-out of the Substances, how the different activities contribute to it, and how they relate to each other. The report should include ODS phase-out as a direct result from the implementation of activities, by substance, and the alternative technology used and the related phase-in of alternatives, to allow the Secretariat to provide to the Executive Committee information about the resulting change in climate relevant emissions. The report should further highlight successes, experiences, and challenges related to the different activities included in the Plan, reflecting any changes in the circumstances in the Country, and providing other relevant information. The report should also include information on and justification for any changes vis-à-vis the previously submitted Annual Implementation Plan(s), such as delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided for in paragraph 7 of this Agreement, or other changes. The narrative report will cover all relevant years specified in sub-paragraph 5(a)(i) of the Agreement and can in addition also include information on activities in the current year;

(c) For each sector plan, a written description of the activities to be undertaken until and including the year of the planned submission of the next tranche request as per sub-paragraph 5(b)(iii). The description should highlight the interdependence of the activities, and take into account experiences made and progress achieved in the implementation of earlier tranches; the data in the plan will be provided by calendar year. The description should also include a reference to the overall plan and progress achieved, as well as any possible changes to the overall plan that are foreseen. The description should further specify and explain in detail such changes to the overall sector plan. This description of future activities can be submitted as a part of the same document as the narrative report under sub-paragraph (b) above;

(d) For each sector plan with activities that include the conversion of manufacturing capacity, a verification report related to completed conversion as per sub-paragraph 5(b)(i) of the Agreement;

(e) For each sector, quantitative information for all annual implementation reports and annual implementation plans, submitted through an online database. This quantitative information, to be submitted by calendar year with each tranche request, will be amending the narratives and description for the report (see sub-paragraph 1(b) and (c)

[2] Tranches with requested level of funding of more than US $5 million should be submitted in full 12 weeks in advance to the applicable Executive Committee meeting in line with decision 20/7.

above), the annual implementation plan and any changes to the overall plan, and will cover the same time periods and activities; and

(f) An Executive Summary of about five paragraphs, summarizing the information of the above sub-paragraphs 1(a) to 1(e).

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES

1. The Foreign Economic Cooperation Office/Ministry of Environment (FECO/MEP) is responsible for the overall co-ordination of activities to be undertaken in the HPMP with assistance of the Lead IA and acts as the National Ozone Unit, responsible for carrying out national policies and legislations regarding the control of ODS.

2. The national consumption will be monitored and determined based on production data and official import and export data for the Substances recorded by relevant government departments in line with paragraph 5(a)(ii) of this Agreement.

3. In addition to the a national system of licensing and quotas for HCFC imports, production and exports referred to in paragraph 5(a)(iii), a quota system covering enterprises using large quantities of HCFC in the different consumption sectors, where applicable, will be established to control the consumption growth, achieve the consumption reduction in those enterprises and collect the consumption data.

4. For those sectors with large amounts of small and medium enterprises, like PU foam sector, solvent sector, XPS foam sector and ICR sector, the consumption would be managed by limiting the quantities of the relevant substances to be sold to the domestic market.

5. FECO/MEP will closely supervise those enterprises carrying out the conversion activities in stage I of the HPMP to ensure the phase-out target in those enterprises had been achieved.

6. FECO/MEP will co-ordinate with the Lead IA and Cooperating IAs to facilitate the verification of the targets set in the Agreement.

7. FECO/MEP will cooperate with the Lead IA and Cooperating IAs in the preparation of reports according to paragraph 5(b)(ii) and Appendix 4-A of this Agreement.

APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY

1. The Lead IA for stage I of the HPMP is UNDP. It will be responsible for a range of activities, including at least the following:

(a) Activities related to national co-ordination;

(b) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's HPMP;

(c) Assisting the Country in preparation of the Implementation Plans and subsequent reports as per Appendix 4-A;

(d) Providing independent verification to the Executive Committee that the Targets have been met (except for overall consumption targets specified in row 1.2 of Appendix 2-A)

and associated annual activities have been completed as indicated in the Implementation Plan consistent with Appendix 4-A. This independent verification can consist of a compilation of sector-specific independent verification carried out by the respective sector Lead IAs;

(e) Ensuring that the experiences and progress is reflected in updates of the overall sector plan and in future annual implementation plans consistent with Appendix 4-A;

(f) Fulfilling the reporting requirements for the annual implementation reports, annual implementation plans and the overall plan as specified in Appendix 4-A for submission to the Executive Committee;

(g) Ensuring that appropriate independent technical experts carry out the technical reviews;

(h) Carrying out required supervision missions;

(i) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Implementation Plan and accurate data reporting;

(j) Ensuring that disbursements made to the Country are based on the use of the indicators; and

(k) Providing assistance with policy, management and technical support when required.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the HPMP results as per sub-paragraph 5(b)(i) of the Agreement and sub-paragraph 1(d) of Appendix 4-A. The Lead IA can delegate the task described in this paragraph to the respective sector Lead IA on the understanding that such delegation will not interfere with the Lead IA's responsibility to carry out the verification of the HPMP results.

APPENDIX 6-B: ROLE OF UNDP

1. UNDP, as the sector Lead IA for the industrial and commercial refrigeration (ICR) sector and the solvent sector, will be responsible for a range of activities described in those sector plans, including at least the following:

(a) Providing assistance for policy development, planning and management of sector programming as set out in these sectors, when required;

(b) Ensuring verification of performance and progress of disbursement in accordance with this Agreement and with its specific internal procedures and requirements as set out in these sectors and assisting the Country in the implementation and assessment of the activities;

(c) Assisting the Country in the preparation of the ICR sector annual Implementation Plans as per Appendix 4-A;

(d) Preparing reports to the Lead IA on these activities as per Appendix 4-A; and

(e) Ensuring financial verification of the activities implemented.

2. UNDP will also act as sector Lead IA for any sector related obligations arising from any HCFC consumption sectors not specifically mentioned in this Agreement, with responsibilities closely resembling those under paragraph 1 above.

APPENDIX 6-C: ROLE OF UNIDO

1. UNIDO, as the Lead IA for the refrigeration and air conditioning (RAC) sector as well as for the extruded polystyrene (XPS) foam sector, will be responsible for a range of activities described in those sector plans, including at least the following:

(a) Providing assistance for policy development, planning and management of sector programming as set out in the RAC and XPS foam sector plans, when required;

(b) Ensuring verification of performance in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's RAC and XPS foam sector plans and assisting the Country in the implementation and assessment of the activities;

(c) Ensuring progress of disbursement in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's RAC and XPS foam sector plans;

(d) Assisting the Country in the preparation of respective RAC and XPS foam sector annual implementation plans as per Appendix 4-A;

(e) Providing reports to the Lead IA on these activities as per Appendix 4-A; and

(f) Ensuring financial verification of the activities implemented.

APPENDIX 6-D: ROLE OF THE GOVERNMENT OF GERMANY

1. The Government of Germany, as a Cooperating IA for the XPS foam sector, will be responsible for a range of activities described in that sector plan, including at least the following:

(a) Providing assistance for policy development, planning and management of sector programming as set out in the XPS foam sector plan, when required;

(b) Assisting the Country in the implementation and assessment of the activities;

(c) Providing reports to the sector Lead IA on these activities as per Appendix 4-A; and

(d) Ensuring financial verification of the activities implemented.

APPENDIX 6-E: ROLE OF THE WORLD BANK

1. After consultation with the Country and taking into account any views expressed, the World Bank will select and mandate an independent entity to carry out the verification of the consumption of the Country as specified in row 1.2 of Appendix 2-A, as per sub-paragraph 5(a)(ii) of this Agreement and sub-paragraph 1(a)(i) of Appendix 4-A.

2. The World Bank, as the sector Lead IA for the polyurethane foam (PU) sector, will be responsible for a range of activities described in that sector plan, including at least the following:

(a) Providing assistance for policy development, planning and management of sector programming as set out in the PU sector plan, when required;

(b) Ensuring verification of performance and progress of disbursement in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's PU sector plan and assisting the Country in the implementation and assessment of the activities;

(c) Assisting the Country in the preparation of PU sector annual implementation plans as per Appendix 4-A;

(d) Providing reports to the Lead IA on these activities as per Appendix 4-A; and

(e) Ensuring financial verification of the activities implemented.

APPENDIX 6-F: ROLE OF UNEP

1. UNEP, as the sector Lead IA for the refrigeration servicing sector, will be responsible for a range of activities described in that sector plan, including at least the following:

(a) Providing policy development assistance when required;

(b) Assisting the Country in the implementation and assessment of the activities under its responsibility and refer to the Lead IA of the HPMP to ensure a co-ordinated sequence in the activities;

(c) Assisting the Country in the preparation of service sector annual implementation plans as per Appendix 4-A;

(d) Providing reports to the Lead IA on these activities as per Appendix 4-A; and

(e) Ensuring financial verification of the activities implemented.

APPENDIX 6-G: ROLE OF THE GOVERNMENT OF JAPAN

1. The Government of Japan, as a Cooperating IA for the refrigeration servicing sector, will be responsible for a range of activities described in that sector plan, including at least the following:

(a) Providing policy development assistance when required;

(b) Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and refer to the sector Lead IA to ensure a co-ordinated sequence in the activities;

(c) Providing reports to the sector Lead IA on these activities as per Appendix 4-A; and

(d) Ensuring financial verification of the activities implemented.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY

1. In accordance with paragraph 10 of the Agreement, the amount of funding provided may be reduced by US $160 per ODP kg of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target specified in row 1.2 of Appendix 2-A has not been met.

APPENDIX 8-A: COMMITMENTS UNDERTAKEN BY THE COUNTRY WITH RESPECT TO CONVERSION IN THE RAC SECTOR

1. During stage I of the HPMP, the Country agrees to convert at least 18 manufacturing lines for the production of RAC equipment to hydrocarbon technology as part of the RAC sector plan.

Annex XV

AGREEMENT BETWEEN THE GOVERNMENT OF CHINA AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS IN ACCORDANCE WITH STAGE II OF THE HCFC PHASE-OUT MANAGEMENT PLAN

Purpose

1. This Agreement represents the understanding of the Government of China (the "Country") and the Executive Committee with respect to the reduction of controlled use of the ozone-depleting substances (ODS) set out in Appendix 1-A ("The Substances") to a sustained level of 11,772 ODP tonnes by 1 January 2020 in compliance with Montreal Protocol schedule, including the total phase-out of HCFCs in the extruded polystyrene (XPS) foam, polyurethane (PU) foam, and solvent sectors by 2026, and noting that the national HCFC consumption target, as well as the targets for the industrial and commercial refrigeration and air conditioning (ICR) sector and the room air-conditioning manufacturing and heat pump water heaters (HPWH) (RAC) sector for the period 2021 to 2026 would be determined when stage III of the HCFC phase-out management plan (HPMP) is submitted.

2. The Country agrees to meet the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A ("The Targets, and Funding") in this Agreement as well as in the Montreal Protocol reduction schedule for all Substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of the Substances that exceeds the level defined in row 1.2 of Appendix 2-A as the final reduction step under this Agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances that exceeds the level defined in rows 4.1.3, 4.2.3, 4.3.3, 4.4.3, 4.5.3, and 4.6.3 (remaining consumption eligible for funding).

3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A ("Funding Approval Schedule").

4. The Country agrees to implement this Agreement in accordance with the stage II of the HPMP approved ("the Plan") and its sector plans. In accordance with sub-paragraph 5(b) of this Agreement, the Country will accept independent verification of the achievement of the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A of this Agreement. The aforementioned verification will be commissioned by the relevant bilateral or implementing agency.

Conditions for funding release

5. The Executive Committee will only provide the Funding in accordance with the Funding Approval Schedule when the Country satisfies the following conditions at least twelve weeks in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:

(a) That the Country has met the Targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years since the year in which this Agreement was approved;

(b) That the meeting of these Targets has been independently verified for all relevant years, unless the Executive Committee decided that such verification would not be required;

(c) That, for sector plans with activities that include the conversion of manufacturing capacity, the Country had submitted an independent verification report of a random sample of at least five per cent of the manufacturing lines which had completed their conversion in the year to be verified, on the understanding that the total aggregated HCFC consumption of the random sample of the manufacturing lines represents at least 10 per cent of the sector consumption phased out in that year;

(d) That the Country had submitted a Tranche Implementation Report in the form of Appendix 4-A ("Format of Tranche Implementation Reports and Plans") covering each previous calendar year; that it had achieved a significant level of implementation of activities initiated with previously approved tranches; and that the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and

(e) That the Country has submitted a Tranche Implementation Plan in the form of Appendix 4-A ("Format for Tranche Implementation Reports and Plans") covering each calendar year until and including the year for which the funding schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.

Monitoring

6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement, and will also continue to maintain and operate a system to monitor the consumption in the different sectors to ensure compliance with the sector consumption limits set out in rows 1.3.1, 1.3.2, 1.3.3, 1.3.4 and 1.3.5 of Appendix 2-A. The institutions set out in Appendix 5-A ("Monitoring Institutions and Roles") will monitor and report on implementation of the activities in the previous Tranche Implementation Plans in accordance with their roles and responsibilities set out in the same appendix. This monitoring will also be subject to independent verification as described in sub-paragraph 5(c) above.

Flexibility in the reallocation of funds

7. The Executive Committee agrees that the Country may have the flexibility to reallocate part or all of the approved funds according to the evolving circumstances to achieve the smoothest reduction of consumption and phase-out of the Substances specified in Appendix 1-A:

(a) Reallocations categorized as major changes must be documented in advance either in a Tranche Implementation Plan as foreseen in sub-paragraph 5(e) above, or as a revision to an existing Tranche Implementation Plan to be submitted at least *twelve weeks* in advance to any meeting of the Executive Committee, for its approval. Major changes would relate to:

(i) Issues potentially concerning the rules and policies of the Multilateral Fund;

(ii) Changes which would modify any clause of this Agreement;

(iii) Changes in the annual levels of funding allocated to individual bilateral or implementing agencies for the different tranches;

(iv) Provision of funding for activities not included in the current approved Tranche Implementation Plan, or removal of an activity in the Tranche Implementation Plan, with a cost greater than 20 per cent of the total cost of the last approved tranche, or US $2.5 million, whichever is lower; and

(v) Changes in alternative technologies already selected, on the understanding that any submission for such a request would identify the associated incremental costs, the potential impact to the climate, and any differences in ODP tonnes to be phased out if applicable, as well as confirm that the Country agrees that potential savings related to the change of technology would decrease the overall funding level under this Agreement accordingly;

(b) Reallocations not categorized as major changes may be incorporated in the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the subsequent Tranche Implementation Report;

(c) Any enterprise to be converted to non-HCFC technology included in the Plan and that would be found to be ineligible under the policies of the Multilateral Fund (i.e., due to foreign ownership or establishment post the 21 September 2007 cut-off date), would not receive financial assistance. This information would be reported as part of the Tranche Implementation Plan;

(d) The Country commits to examining the possibility of using pre-blended systems with low-global warming potential (GWP) blowing agents instead of blending them in-house, for those foam enterprises covered under the Plan, should this be technically viable, economically feasible and acceptable to the enterprises;

(e) The Country agrees, in cases where HFC technologies have been chosen as an alternative to HCFCs, and taking into account national circumstances related to health and safety: to monitor the availability of substitutes and alternatives that further minimize impacts on the climate; to consider, in the review of regulations, standards and incentives adequate provisions that encourage introduction of such alternatives; and to consider the potential for adoption of cost-effective alternatives that minimize the climate impact in the implementation of the HPMP, as appropriate, and inform the Executive Committee on the progress accordingly in tranche implementation reports; and

(f) Any remaining funds held by the bilateral or implementing agencies or the Country under the Plan will be returned to the Multilateral Fund upon completion of the last tranche foreseen under this Agreement.

Considerations for the refrigeration servicing sector

8. Specific attention will be paid to the execution of the activities in the refrigeration servicing sector included in the Plan, in particular:

(a) The Country would use the flexibility available under this Agreement to address specific needs that might arise during project implementation; and

(b) The Country and relevant bilateral and/or implementing agencies would take into consideration relevant decisions on the refrigeration servicing sector during the implementation of the Plan.

Bilateral and implementing agencies

9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNDP has agreed to be the lead implementing agency (the “Lead IA”); UNDP, UNIDO,

United Nations Environment Programme (UN Environment) and the World Bank have agreed to be the sector lead implementing agencies ("Sector Lead IAs") under the overall lead of the Lead IA for ICR and solvent, XPS foam and RAC, service sector and enabling programme, and the PU foam sectors, respectively; and the Government of Germany, the Government of Italy, the Government of Japan have agreed to be cooperating implementing agencies (the "Cooperating IAs") under the lead of the Sector Lead and Lead IA in respect of the Country's activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of the Lead IA, Sector Lead IAs, and/or Cooperating IAs.

10. The Lead IA will be responsible for ensuring co-ordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to independent verification as per sub-paragraph 5(b). The roles of the Lead IA, Sector Lead IAs, and Cooperating IAs are contained in Appendix 6-A, Appendix 6-B and Appendix 6-D, respectively. The Executive Committee agrees, in principle, to provide the Lead IA, Sector Lead IAs, and the Cooperating IAs with the fees set out in rows 2.1.2, 2.2.2, 2.2.4, 2.3.2, 2.4.2, 2.4.4, 2.5.2, 2.5.4, 2.5.6, and 2.6.2 of Appendix 2-A.

Non-compliance with the Agreement

11. Should the Country, for any reason, not meet the Targets for the elimination of the Substances set out in row 1.2 and, starting in 2019, rows 1.3.1, 1.3.2, 1.3.3, 1.3.4, or 1.3.5 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. The Country would not be double-penalized through both an aggregate and a sector-specific penalty. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amount set out in Appendix 7-A ("Reductions in Funding for Failure to Comply") in respect of each ODP kg of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement, and take related decisions. Once decisions are taken, the specific case of non-compliance with this Agreement will not be an impediment for the provision of funding for future tranches as per paragraph 5 above.

12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decisions that may affect the funding of any other consumption sector projects or any other related activities in the Country.

13. The Country will comply with any reasonable request of the Executive Committee, the Lead IA, Sector Lead IAs, and the Cooperating IAs to facilitate implementation of this Agreement. In particular, it will provide the Lead IA, Sector Lead IAs, and the Cooperating IAs with access to the information necessary to verify compliance with this Agreement.

Date of completion

14. The completion of the Plan and the associated Agreement will take place at the end of 2027. The completion of each sector plan will take place at the end of the year following the last year for which a maximum allowable total consumption level has been specified for the sector in Appendix 2-A. Should at that time there still be activities that are outstanding, and which were foreseen in the last Tranche Implementation Plan and its subsequent revisions as per sub-paragraph 5(e) and paragraph 7, the completion of the Plan or sector plan will be delayed until the end of the year following the implementation of the remaining activities upon approval by the Executive Committee. The reporting

requirements as per sub-paragraphs 1(a) to 1(f) of Appendix 4-A will continue until the time of the completion of the Plan unless otherwise specified by the Executive Committee.

Validity

15. All of the conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

16. This Agreement may be modified or terminated only by mutual written agreement of the Country and the Executive Committee of the Multilateral Fund.

APPENDICES

APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	11,495.31
HCFC-123	C	I	10.13
HCFC-124	C	I	3.07
HCFC-141b	C	I	5,885.18
HCFC-142b	C	I	1,470.53
HCFC-225	C	I	1.22
Total	**C**	**I**	**18,865.44**

APPENDIX 2-A: THE TARGETS, AND FUNDING

Row	Particulars	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Consumption targets													
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	17,342.1	17,342.1	17,342.1	17,342.1	12,524.9	12,524.9	12,524.9	12,524.9	12,524.9	6,262.4	6,262.4	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	16,978.9	16,978.9	15,048.1	15,048.1	11,772.0	*	*	*	*	*	*	n/a
1.3.1	Maximum allowable consumption of Annex C, Group I substances in the ICR sector (ODP tonnes)	2,162.5	2,162.5	2,042.4	2,042.4	1,609.9	1,609.9	**	**	**	**	**	n/a
1.3.2	Maximum allowable consumption of Annex C, Group I substances in the XPS foam sector (ODP tonnes)	2,286.0	2,286.0	2,032.0	2,032.0	1,397.0	1,397.0	1,397.0	762.0	762.0	165.0	0.0	n/a
1.3.3	Maximum allowable consumption of Annex C, Group I substances in the PU foam sector (ODP tonnes)	4,449.6	4,449.6	3,774.5	3,774.5	2,965.7	2,965.7	2,965.7	1,078.4	1,078.4	330.0	0.0	n/a
1.3.4	Maximum allowable consumption of Annex C, Group I substances in the RAC sector (ODP tonnes)	3,697.7	3,697.7	2,876.0	2,876.0	2,259.7	2,259.7	***	***	***	***	***	n/a

Row	Particulars	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
1.3.5	Maximum allowable consumption of Annex C, Group I substances in the solvent sector	455.2	455.2	395.4	395.4	321.2	321.2	321.2	148.3	148.3	55.0	0.0	n/a
Funding industrial and commercial refrigeration and air conditioning (ICR) sector plan													
2.1.1	Sector Lead IA (UNDP) agreed funding (US $)	13,368,756	20,000,000	12,000,000	16,000,000	16,000,000	11,776,041	-	-	-	-	-	89,144,797
2.1.2	Support costs for UNDP (US $)	935,813	1,300,000	780,000	1,040,000	1,040,000	765,443	-	-	-	-	-	5,861,256
Funding extruded polystyrene (XPS) foam sector plan													
2.2.1	Sector Lead IA (UNIDO) agreed funding (US $)	7,514,867	8,732,614	8,000,000	9,243,486	9,600,000	14,788,765	11,400,000	11,300,000	9,550,000	9,600,000	11,971,763	111,701,495
2.2.2	Support costs for UNIDO (US $)	526,041	567,620	520,000	600,827	624,000	961,270	741,000	734,500	620,750	624,000	778,165	7,298,172
2.2.3	Sector cooperating agency (Germany) agreed funding (US $)	-	267,386		356,514		211,235			250,000	-	-	1,085,135
2.2.4	Support costs for Germany (US $)	-	31,877	-	42,502	-	25,183	-	-	29,804	-	-	129,365
Funding polyurethane (PU) foam sector plan													
2.3.1	Sector Lead IA (World Bank) agreed funding (US $)	7,045,027	10,600,000	9,500,000	12,700,000	12,700,000	20,000,000	15,700,000	15,600,000	10,500,000	13,100,000	14,026,183	141,471,210
2.3.2	Support costs for World Bank (US $)	493,152	689,000	617,500	825,500	825,500	1,300,000	1,020,500	1,014,000	682,500	851,500	911,702	9,230,854
Funding room air conditioning (RAC) sector plan													
2.4.1	Sector Lead IA (UNIDO) agreed funding (US $)	14,671,089	16,000,000	18,000,000	14,000,000	14,000,000	11,581,816	-	-	-	-	-	88,252,905
2.4.2	Support costs for UNIDO (US $)	1,026,976	1,040,000	1,170,000	910,000	910,000	752,818	-	-	-	-	-	5,809,794
2.4.3	Sector cooperating agency (Italy) agreed funding (US $)	891,892	-	-	-	-	-	-	-	-	-	-	891,892
2.4.4	Support costs for Italy (US $)	108,108	-	-	-	-	-	-	-	-	-	-	108,108

Row	Particulars	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Funding service sector plan, including enabling programme													
2.5.1	Sector Lead IA (UN Environment) agreed funding (US $)	3,299,132	2,570,000	3,270,000	3,370,000	3,570,000	2,810,868	-	-	-	-	-	18,890,000
2.5.2	Support costs for UN Environment (US $)	364,651	284,061	361,431	372,484	394,590	310,684	-	-	-	-	-	2,087,900
2.5.3	Sector cooperating agency (Germany) agreed funding (US $)	300,000	-	300,000	200,000	-	200,000	-	-	-	-	-	1,000,000
2.5.4	Support costs for Germany (US $)	36,000	-	36,000	24,000	-	24,000	-	-	-	-	-	120,000
2.5.5	Sector cooperating agency (Japan) agreed funding (US $)	80,000	80,000	80,000	80,000	80,000	-	-	-	-	-	-	400,000
2.5.6	Support costs for Japan (US $)	10,400	10,400	10,400	10,400	10,400	-	-	-	-	-	-	52,000
Funding solvent sector plan													
2.6.1	Overall Lead IA (UNDP) agreed funding (US $)	2,821,937	3,777,190	2,959,930	3,229,030	3,601,083	7,888,921	7,128,589	3,664,360	5,481,592	2,707,880	4,002,054	47,262,566
2.6.2	Support costs for UNDP (US $)	197,536	245,517	192,396	209,887	234,070	512,780	463,358	238,183	356,304	176,012	260,134	3,086,177
Overall funding													
3.1	Total agreed funding (US $)	49,992,700	62,027,190	54,109,930	59,179,030	59,551,083	69,257,646	34,228,589	30,564,360	25,781,592	25,407,880	30,000,000	500,100,000
3.2	Total support cost (US $)	3,698,676	4,168,474	3,687,727	4,035,600	4,038,560	4,652,176	2,224,858	1,986,683	1,689,357	1,651,512	1,950,000	33,783,625
3.3	Total agreed costs (US $)	53,691,376	66,195,664	57,797,657	63,214,630	63,589,643	73,909,822	36,453,447	32,551,043	27,470,949	27,059,392	31,950,000	533,883,625

Row	Particulars	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Phase-out and remaining eligible consumption													
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this Agreement (ODP tonnes)												3,878.80
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)												1,479.72
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)												6,136.79
4.2.1	Total phase-out of HCFC-123 agreed to be achieved under this Agreement (ODP tonnes)												2.70
4.2.2	Phase-out of HCFC-123 to be achieved in previously approved projects (ODP tonnes)												0.00
4.2.3	Remaining eligible consumption for HCFC-123 (ODP tonnes)												7.43
4.3.1	Total phase-out of HCFC-124 agreed to be achieved under this Agreement (ODP tonnes)												0.00
4.3.2	Phase-out of HCFC-124 to be achieved in previously approved projects (ODP tonnes)												0.00
4.3.3	Remaining eligible consumption for HCFC-124 (ODP tonnes)												3.07
4.4.1	Total phase-out of HCFC-141b agreed to be achieved under this Agreement (ODP tonnes)												4,187.18****
4.4.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)												1,698.00
4.4.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)												0.00
4.5.1	Total phase-out of HCFC-142b agreed to be achieved under this Agreement (ODP tonnes)												646.02
4.5.2	Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes)												267.47
4.5.3	Remaining eligible consumption for HCFC-142b (ODP tonnes)												557.04
4.6.1	Total phase-out of HCFC-225 agreed to be achieved under this Agreement (ODP tonnes)												1.13
4.6.2	Phase-out of HCFC-225 to be achieved in previously approved projects (ODP tonnes)												0.00
4.6.3	Remaining eligible consumption for HCFC-225 (ODP tonnes)												0.09

* Maximum allowable total consumption of Annex C, Group I substances for the period 2021 to 2026 would be determined at a later date, but would in no case be greater than 11,772 ODP tonnes prior to 2025, and no greater than 6,131 ODP tonnes thereafter.

** Maximum allowable total consumption of Annex C, Group I substances in the ICR sector for the period 2021 to 2026 would be determined later, but would in no case be greater than 1,609.9 ODP tonnes prior to 2025, and no greater than 781 ODP tonnes thereafter.

*** Maximum allowable total consumption of Annex C, Group I substances in the RAC sector for the period 2021 to 2026 would be determined later, but would in no case be greater than 2,259.7 ODP tonnes prior to 2025, and no greater than 1,335 ODP tonnes thereafter.

**** In accordance with decision 68/42(b), includes 137.83 ODP tonnes of HCFC-141b contained in exported pre-blended polyols.

Note: Date of completion of stage I as per stage I Agreement: 31 December 2019.

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE

1. Funding for the future tranches will be considered for approval at the *last* meeting of the year specified in Appendix 2-A.

APPENDIX 4-A: FORMAT OF TRANCHE IMPLEMENTATION REPORTS AND PLANS

1. The submission of the Tranche Implementation Report and Plans for each sector tranche request will consist of the following parts:

(a) A narrative report, with data provided by tranche, describing the progress achieved since the previous report, reflecting the situation of the Country in regard to phase out of the Substances, how the different activities contribute to it, and how they relate to each other; the amount of ODS phased out as a direct result from the implementation of activities, by substance, and the alternative technology used and the related phase-in of alternatives; the amount of co-funding provided by the Country for the HCFC reductions; successes, experiences, and challenges related to the different activities included in the Plan, reflecting any changes in the circumstances in the Country, and providing other relevant information; information on and justification for any changes vis-à-vis the previously submitted Tranche Implementation Plan(s), such as delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided for in paragraph 7 of this Agreement, or other changes;

(b) An independent verification report of the consumption of the Substances, as per sub-paragraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification has to be provided together with each tranche request and will have to provide verification of the consumption for all relevant years as specified in sub-paragraph 5(a) of the Agreement for which a verification report has not yet been acknowledged by the Committee;

(c) For sector plans with activities that include the conversion of manufacturing capacity, an independent verification report as per sub-paragraph 5(c) of the Agreement, including a random sample of at least five per cent of the manufacturing lines which had completed their conversion in the year to be verified, and specifying at a minimum the following information: name of the enterprises; level of the Substance consumption prior to conversion; the alternative technology that has been introduced including the alternative Substance consumption level; the manufacturing capacity and actual production level before and after conversion; and the detailed incremental cost of the conversion;

(d) A written description of the activities to be undertaken during the period covered by the requested tranche, highlighting implementation milestones, the time of completion and the interdependence of the activities, any possible changes to the overall Plan that are foreseen, taking into account experiences made and progress achieved in the implementation of earlier tranches;

(e) A set of quantitative information for all Tranche Implementation Reports and Plans, submitted through an online database; and

(f) An Executive Summary of about five paragraphs, summarizing the information of the above sub-paragraphs 1(a) to 1(e).

2. In the event that in a particular year two stages of the HPMP are being implemented in parallel, the following considerations should be taken in preparing the Tranche Implementation Reports and Plans:

(a) The Tranche Implementation Reports and Plans referred to as part of this Agreement, will exclusively refer to activities and funds covered by this Agreement; and

(b) If the stages under implementation have different HCFC consumption targets under Appendix 2-A of each Agreement in a particular year, the lower HCFC consumption target will be used as reference for compliance with these Agreements and will be the basis for the independent verification.

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES

1. The Foreign Economic Cooperation Office/Ministry of Environmental Protection (FECO/MEP), as the National Ozone Unit, is responsible for the following:

(a) Co-ordinating the overall implementation of activities to be undertaken with assistance of the Lead IA, Sector Lead IAs and other Cooperating IAs;

(b) Developing and implementing national policies and legislations on the control of ODS;

(c) Monitoring national consumption based on production data and official import and export data for the Substances recorded by relevant government departments in line with sub-paragraph 5(b) of this Agreement;

(d) Supervising implementation of the national system of licensing and quotas for HCFC imports, production and exports, the quota system covering enterprises using large quantities of HCFC in the different consumption sectors, where applicable, and collect the consumption data to control the consumption growth and achieve reduction of HCFC consumption in those enterprises, where applicable;

(e) Managing consumption in those sectors with large amounts of small and medium-sized (SMEs) enterprises (e.g., XPS and PU foam, ICR, and solvent sectors), by limiting the quantities of the relevant substances to be sold to the domestic market;

(f) Supervising enterprises carrying out the conversion activities to ensure the phase-out target in those enterprises had been achieved; and

(g) Co-ordinate with Lead IA, Sector Lead IAs, and Cooperating IAs to facilitate the verification of the sector targets set in the Agreement and in the preparation of reports according to sub-paragraph 5(d) and Appendix 4-A of this Agreement.

APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY

1. The Lead IA will be responsible for a range of activities, including at least the following:

(a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's HPMP;

(b) Assisting the Country in preparation and submission of the Tranche Implementation Reports and Plans as per Appendix 4-A;

(c) Providing independent verification to the Executive Committee that the Targets have been met and associated tranche activities have been completed as indicated in the Tranche Implementation Plan consistent with Appendix 4-A;

(d) Fulfilling the reporting requirements for the overall plan as specified in Appendix 4-A for submission to the Executive Committee;

(e) Ensuring that the experiences and progress is reflected in updates of the overall plan and in future Tranche Implementation Plans consistent with sub-paragraphs 1(d) and 1(e) of Appendix 4-A;

(f) In the event that the last funding tranche is requested one or more years prior to the last year for which a consumption target had been established, co-ordinate with the responsible Sector Lead IA to ensure that annual tranche implementation reports and, where applicable, verification reports on the current stage of the Plan are submitted until all activities foreseen had been completed and HCFC consumption targets had been met;

(g) Ensuring that appropriate independent technical experts carry out the technical reviews;

(h) Carrying out the required supervision missions;

(i) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;

(j) With the Country, co-ordinating the activities of the Sector Lead IAs and Cooperating IAs, and ensuring appropriate sequence of activities;

(k) In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country, the Sector Lead IAs and the Cooperating IAs, the allocation of the reductions to the different sectors and budget items and to the funding of the Sector Lead IAs and each Cooperating IA;

(l) Providing assistance with policy, management and technical support when required;

(m) Reaching consensus with the Sector Lead IAs and Cooperating IAs on any planning, co-ordination and reporting arrangements required to facilitate the implementation of the Plan; and

(n) Co-ordinating the annual financial audit of the income received from the implementing agencies, the disbursements by FECO/MEP to final beneficiaries, and the interest amount earned by FECO/MEP on the balances held by FECO/MEP.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the HPMP results as per sub-paragraphs 5(c) of the Agreement and sub-paragraph 1(c) of Appendix 4-A. The Lead IA can delegate the task described in this paragraph to the respective Sector Lead IA on the understanding that such delegation will not interfere with the Lead IA's responsibility to carry out the verification of the HPMP results.

APPENDIX 6-B: ROLE OF THE SECTOR LEAD IAs

1. The Sector Lead IAs will be responsible for a range of activities described in their corresponding sector plan, including at least the following:

(a) Providing assistance for policy development, planning and management of sector programming as set out in the sector plans, when required;

(b) Ensuring verification of sector performance targets in line with paragraph 5(c) and progress of disbursement in accordance with this Agreement and with its specific internal procedures and requirements as set out in the relevant sectors and assisting the Country in the implementation and assessment of the activities;

(c) Fulfilling the reporting requirements for the sector Tranche Implementation Reports and Plans as specified in Appendix 4-A for submission to the Executive Committee and, where relevant, including the activities implemented by the Cooperating IAs;

(d) Ensuring that appropriate independent technical experts carry out the technical reviews;

(e) Carrying out required supervision missions;

(f) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;

(g) Ensuring that disbursements made to the Country are based on the use of the indicators;

(h) Where relevant, reaching consensus with the Cooperating IAs on any planning, co-ordination and reporting arrangements required to facilitate the implementation of the Plan;

(i) Timely releasing funds to the Country/participating enterprises for completing the activities related to the sector; and

(j) Ensuring financial verification of the activities implemented.

APPENDIX 6-C: ROLE OF THE WORLD BANK IN THE VERIFICATION OF CONSUMPTION

1. In addition to its role as the Implementing Agency of the China HCFC Production Phase-out Management Plan, after consultation with the Country and taking into account any views expressed, the World Bank will select and mandate an independent entity to carry out the verification of the consumption of the Country as specified in row 1.2 of Appendix 2-A, as per sub-paragraph 5(b) of this Agreement and sub-paragraph 1(b) of Appendix 4-A.

APPENDIX 6-D: ROLE OF THE COOPERATING IAs

1. The Cooperating IAs will be responsible for a range of activities described in each sector plan, including at least the following:

(a) Providing assistance for policy development, planning and management of the sector programming as set out in the respective sector plan, when required;

(b) Assisting the Country in the implementation and assessment of the activities, and referring to the Sector Lead IA to ensure a co-ordinated sequence in the activities;

(c) Providing reports to the Sector Lead IA on these activities as per Appendix 4-A;

(d) Reaching consensus with the Sector Lead IA on any planning, co-ordination and reporting arrangements required to facilitate the implementation of the Plan; and

(e) Ensuring financial verification of the activities implemented.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US $115 per ODP kg of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target specified in row 1.2 of Appendix 2-A has not been met, on the understanding that the maximum funding reduction would not exceed the funding level of the tranche being requested. Additional measures might be considered in cases where non-compliance extends for two consecutive years.

2. Starting for the consumption in 2019, the amount of funding provided may be reduced by US $115 per ODP kg of consumption beyond the level defined in rows 1.3.1, 1.3.2, 1.3.3, 1.3.4, or 1.3.5 of Appendix 2-A for each year in which the target specified in rows 1.3.1, 1.3.2, 1.3.3, 1.3.4, or 1.3.5 of Appendix 2-A has not been met, on the understanding that compliance with the targets defined in rows 1.3.1, 1.3.2, 1.3.3, 1.3.4, and 1.3.5 would be assessed based on existing sectoral reporting arrangements under the progress report on the implementation of the country programme and Tranche Implementation Report and Plans, and would not be independently verified.

3. In the event that the penalty needs to be applied for a year in which there are two Agreements in force (two stages of the HPMP being implemented in parallel) with different penalty levels, the application of the penalty will be determined on a case-by-case basis taking into consideration the specific sectors that lead to the non-compliance. If it is not possible to determine a sector, or both stages are addressing the same sector, the penalty level to be applied would be the largest.

APPENDIX 8-A: SECTOR SPECIFIC ARRANGEMENTS

1. During stage II of the HPMP for the RAC sector, the Country agrees to convert at least:

(a) Twenty manufacturing lines for the production of RAC equipment to HC-290;

(b) Three compressor manufacturing lines to HC-290;

(c) Three residential HPWH manufacturing lines to HC-290; and

(d) Two residential HPWH manufacturing lines to R-744;

2. During stage II of the HPMP for the ICR sector, the Country agrees:

(a) That a maximum quantity of 3,150 metric tonnes (mt) in the unitary air-conditioning (UAC) sub-sector could be converted to HFC-32;

(b) That the Country would have flexibility in the UAC sub-sector to convert to alternatives with a lower GWP than HFC-32 as long as the cost and tonnage to be phased out remained the same;

(c) That the Country would have flexibility to convert industrial and commercial HPWH lines to HFC-32 on the understanding that UAC and industrial and commercial HPWH conversions to HFC-32 combined would not exceed 3,150 mt;

(d) That at least 20 per cent of the total phase-out of HCFC-22 in the ICR sector would be from the conversion of SMEs (i.e. those consuming 50 mt or less); and

(e) That, in sectors other than the UAC sub-sector, the Country would have flexibility to select from among the six low-GWP technologies identified in Table 8 of the ICR sector of document UNEP/OzL.Pro/ExCom/76/25, excluding HFC-32, and would make best efforts to ensure that the tonnage remained within 30 per cent of the amount specified for each technology in that table, at no additional cost to the Multilateral Fund, and that any deviation from that range would be reported to the Executive Committee for its consideration.

Annex XXVI

AGREEMENT BETWEEN THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE MONTREAL PROTOCOL AND THE GOVERNMENT OF CHINA FOR THE PHASE-OUT OF PRODUCTION OF HYDROCHLOROFLUOROCARBONS REQUIRED BY THE MONTREAL PROTOCOL

1. This Agreement represents the understanding of the Government of China (the "Country") and the Executive Committee with respect to the total phase-out of production of the hydrochlorofluorocarbons (HCFCs) for controlled uses, as set out in Appendix 1-A ("The Substances") to this Agreement, and the freeze and 10 per cent baseline reduction foreseen for stage I of the HCFC Production Sector Phase-out Management Plan (HPPMP).

Framework agreement for total phase-out

2. The total compensation for the entire China HCFC production sector for phasing out HCFC production for controlled uses in accordance with the Montreal Protocol phase-out schedule shall not exceed US $385 million, inclusive of all project costs, excluding agency fees, with the allocation of payments beyond Stage I to be addressed in future stages.

3. The total amount of phase-out to be achieved under the HPPMP is 445,888 metric tonnes (MT), based on the verified 2010 ODS production data of: 310,000 MT of HCFC-22, 98,711 MT of HCFC-141b, 33,957 MT of HCFC-142b, 2,819 MT of HCFC-123 and 401 MT of HCFC-124.

4. Appendix 1-A to this Agreement establishes a starting point for aggregate reduction in HCFC production eligible for funding of 30,180 ODP tonnes (445,888 MT).

5. The Country agrees that funding for Stage I and beyond should be used to prioritize total permanent closure and dismantling of production lines.

6. The Country agrees:

(a) To retire an additional 24 per cent of the production capacity that was established as of 2010 beyond the total tonnage of 445,888 MT as mentioned in paragraph 3 above (i.e., 552,901 MT) to take into account average utilization of HCFC production capacity;

(b) The 552,901 MT includes all production lines based on the list of HCFC production plants, as specified in the addendum to the HPPMP referred to in paragraph 1 of Appendix 4-A of this Agreement, namely: (i) those production lines producing HCFCs for controlled uses that will be closed and dismantled; (ii) other production lines producing for both controlled uses and feedstock that will be retired as needed to achieve the target in paragraph 6(a); and

(c) Capacity closure and retirement strategies are to be further defined, monitored and updated in future tranche implementation work plans and progress reports.

7. The Country agrees to ensure that any funds in the possession of the Foreign Economic Cooperation Office/Ministry of the Environment (FECO/MEP) will return a reasonable rate of interest and that any interest will be offset in future tranches with the reporting requirements of FECO/MEP and the World Bank pursuant to decision 70/20(c) on the reporting on disbursement.

8. The Country will not provide funding in Stage I or beyond for the production line which produced CFCs in Zhejiang Juhua Fluoro-chemical Co. Ltd. in 2010.

9. The Country agrees to ensure that any compensated plant does not redirect any phased out HCFC production capacity toward feedstock, subject to a penalty to be specified in the agreement for each stage of the HPPMP.

10. The Country agrees to coordinate with its stakeholders and authorities to make best efforts to manage HCFC production and associated by-product production in HCFC plants in accordance with best practices to minimize associated climate impacts. The budget and activities for such coordination will be included in the tranche implementation work plan and progress report.

11. The Country agrees to optimize the implementation of the HPPMP and its addendum in order to minimize environmental and climate impacts as much as possible, including by giving priority to HCFC production closure to achieve the HCFC reduction targets set forth in Decision XIX/6 of the Nineteenth Meeting of the Parties to the Montreal Protocol.

12. The penalty is US$ 1.73 per kg/year of production in excess of the level required in this Agreement. The Country agrees that any compensated HCFC production plant that redirects any phased out HCFC production capacity to feedstock will be subject to the penalty to be specified in the agreement for each stage of the HPPMP.

Stage I of the HPPMP

13. Stage I of the HPPMP for the Country is approved in principle at a total of US $95 million to meet the freeze and 10 per cent reduction of the HCFC production baseline for compliance, inclusive of all project costs, excluding agency support costs, recognizing the Country's need to front-load payments, according to the following payment schedule: US $24 million for the 2013 tranche; US $23 million for the 2014 tranche; US $24 million for the 2015 tranche, and US $24 million for the 2016 tranche. The total funds for the 2014-2016 tranches will be released to the Country only after a verification report of prior year data confirming achievement of the previous production limits target has been approved by the Executive Committee.

14. Stage I of the HPPMP will result in a sustained level of 29,122 ODP tonnes by 2013 and 10 per cent reduction target of 26,210 ODP tonnes by 2015 in compliance with Montreal Protocol schedules**.**

15. The Country agrees to meet the annual production limits for the substances set out in row 1.2 ("Maximum Allowable Production of Annex C, Group I Substances") of Appendix 2-A ("The Targets, and Funding") to this Agreement, as well as in the reduction schedule for all substances mentioned in row 1.1 of Appendix 2-A.

16. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees, in principle, to provide the funding set out in row 3.1 of Appendix 2-A ("The Targets, and Funding") to the Country. The Executive Committee will provide this funding at the Executive Committee meetings specified in Appendix 3-A ("Funding Approval Schedule").

17. The Country accepts that, by its acceptance of this Agreement and fulfilment by the Executive Committee of its funding obligations for stage I described in paragraph 16 above, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect of any production of each of the substances that exceeds the levels defined in rows 4.1.3, 4.2.3, 4.3.3, 4.4.3 and 4.5.3 of Appendix 2-A.

18. The Country agrees to implement this Agreement in accordance with stage I of the HPPMP submitted, and as modified by this Agreement with respect to funding levels and other conditions of approval specified in Executive Committee decision 69/28(e) , the addendum to the HPPMP referred to in paragraph 1 of Appendix 4-A, and the application of the flexibility clause as specified in paragraph 20 below as informed or requested in annual implementation work plans and progress reports. In accordance with paragraph 19(b), the Country will accept independent verification of achievement of the annual production limits set out in row 1.2 of Appendix 2-A. The aforementioned verification will be commissioned by the relevant implementing agency.

19. The Executive Committee will not provide the funding in accordance with the Funding Approval Schedule unless the Country satisfies the following conditions at least twelve weeks in advance of the applicable Executive Committee meeting set out in the Funding Approval Schedule:

(a) The Country has met the targets set out in row 1.2 of Appendix 2-A for all relevant years. Relevant years are all years including the year in which this Agreement was approved;

(b) The achievement of these targets has been independently verified and the verification report will be submitted at least eight weeks in advance to the Secretariat of the relevant Executive Committee meeting, unless the Executive Committee decides that such verification is not required;

(c) The Country has submitted: annual implementation reports in the format in Appendix 4-A ("Format of Implementation Reports and Plans") covering each previous calendar year and confirming that the conditions set out in paragraphs 6 to 12 of this Agreement have been met where applicable; has achieved a significant level of implementation of activities initiated with previously approved tranches; and the rate of disbursement of funding available from the previously approved tranche exceeded 20 per cent; and

(d) The Country has submitted an annual implementation plan in the format in Appendix 4-A covering each calendar year up to and including the year for which the funding schedule foresees the submission of the next tranche or, in the case of the final tranche, until completion of all activities foreseen.

20. The Executive Committee agrees that the Country may have the flexibility to reallocate the approved funds, or part of the funds, according to the evolving circumstances, to achieve the smoothest reduction of production and phase-out of the substances specified in Appendix 1-A.

(a) Reallocations categorized as major changes must be documented in advance in an annual implementation plan and approved by the Executive Committee, as described in sub-paragraph 19(d) above. The documentation can also be provided as part of a revision to an existing annual implementation plan, to be submitted eight weeks prior to any meeting of the Executive Committee. Major changes would relate to:

(i) Issues potentially concerning the rules and policies of the Multilateral Fund;

(ii) Modifications to any clause in this Agreement;

(iii) Provision of funding for programmes or activities not included in the current endorsed annual implementation plan involving costs exceeding 30 per cent of the total cost of the previous approved tranche;

(iv) Removal of activities in the annual implementation plan involving costs exceeding 30 per cent of the total cost of the previous approved tranche;

(v) Reallocations not categorized as major changes may be incorporated into the approved annual implementation plan being implemented at that time, and reported to the Executive Committee in the subsequent annual implementation report; and

(vi) Any funds remaining from Stage I of the HPPMP will be returned to the Multilateral Fund upon completion of the last tranche foreseen under this Agreement with the understanding that the funds returned would not be deducted from the maximum level of funding for the overall phase-out.

21. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A ("Monitoring Institutions and Roles") will monitor and report on implementation of the activities in the previous annual implementation plans in accordance with their roles and responsibilities set out in Appendix 5-A. This monitoring will also be subject to independent verification, as described in paragraph 19(b) above.

22. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. The World Bank has agreed to be the lead implementing agency (the "Lead IA") in respect of the Country's activities under this Agreement. The Country agrees to evaluations, which may be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of the Lead IA.

23. The Lead IA will be responsible for ensuring coordinated planning, implementation and reporting of all activities under this Agreement, including but not limited to independent verification, as per paragraph 19(b) above. The Executive Committee agrees, in principle, to provide the Lead IA with the fees set out in row 2.2 of Appendix 2-A.

24. Should the Country, for any reason, not meet the targets for the phase-out of the substances set out in row 1.2 of Appendix 2-A or otherwise not comply with this Agreement, the Country agrees that it will not be entitled to the funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all its obligations that should have been met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the funding by the amount set out in Appendix 7-A (Reductions in Funding for Failure to Comply for Stage I) in respect of each kg of reduction in production not achieved in any one year and, in respect of any redirection of phased-out HCFC production capacity to feedstock uses by compensated HCFC production plant, as indicated in the addendum to the HPPMP. The Executive Committee will discuss each specific case in which the Country did not comply with this Agreement, and take related decisions. Once these decisions have been taken, this specific case will not be an impediment to receiving future tranches, as per paragraph 16 above.

25. Funding under this Agreement will not be modified on the basis of any future Executive Committee decision that may affect the funding of any other HCFC production sector projects.

26. The Country will comply with any reasonable request by the Executive Committee or the Lead IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA with access to the information necessary to verify compliance with this Agreement.

27. Stage I of the reduction in production of HCFCs and the associated Agreement will be completed at the end of the year following the last year for which a maximum allowable total production level has been specified in Appendix 2-A. At that time, should there still be outstanding activities foreseen in the Plan and its subsequent revisions, as per paragraphs 19(d) and 20, the completion will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per sub-paragraphs 2(a), 2(b), 2(d), and 2(e) of Appendix 4-A will continue until the time of completion of Stage I, unless otherwise specified by the Executive Committee.

28. All of the conditions set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.

APPENDICES

APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point (2010) for aggregate reductions in production (ODP tonnes)
HCFC-22	C	I	17,050
HCFC-141b	C	I	10,858
HCFC-142b	C	I	2,207
HCFC-123	C	I	56
HCFC-124	C	I	9
Total			30,180

APPENDIX 2-A: THE TARGETS, AND FUNDING FOR STAGE I OF THE AGREEMENT

Row	Particulars	2013	2014	2015	2016	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	1,058	0	2,912	0	3,970
1.2	Maximum allowable total production of Annex C, Group I substances (ODP tonnes)	29,122	29,122	26,210	26,210	n/a
2.1	Lead IA (World Bank) agreed funding (US $million)	24	23	24	24	95
2.2	Support costs for Lead IA (US $million)	1.344	1.288	1.344	1.344	5.320
3.1	Total agreed funding (US $million)	24	23	24	24	95
3.2	Total support costs (US $million)	1.344	1.288	1.344	1.344	5.320
3.3	Total agreed costs (US $million)	25.344	24.288	25.344	25.344	100.32
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under stage I of this Agreement (ODP tonnes)					923
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)					0
4.1.3	Remaining eligible production for HCFC-22 (ODP tonnes)					16,127
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under stage I of this Agreement (ODP tonnes)					2,606
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)					0
4.2.3	Remaining eligible production for HCFC-141b (ODP tonnes)					8,252
4.3.1	Total phase-out of HCFC-142b agreed to be achieved under stage I of this Agreement (ODP tonnes)					441
4.3.2	Phase-out of HCFC-142b to be achieved in previously approved projects (ODP tonnes)					0
4.3.3	Remaining eligible production for HCFC-142b (ODP tonnes)					1,766
4.4.1	Total phase-out of HCFC-123 agreed to be achieved under stage I of this Agreement (ODP tonnes)					0
4.4.2	Phase-out of HCFC-123 to be achieved in previously approved projects (ODP tonnes)					0
4.4.3	Remaining eligible production for HCFC-123 (ODP tonnes)					56
4.5.1	Total phase-out of HCFC-124 agreed to be achieved under this stage I of Agreement (ODP tonnes)					0
4.5.2	Phase-out of HCFC-124 to be achieved in previously approved projects (ODP tonnes)					0
4.5.3	Remaining eligible production for HCFC-124 (ODP tonnes)					9

APPENDIX 3-A: FUNDING APPROVAL SCHEDULE FOR STAGE I

1. Funding for future work plan will be considered for approval at the last meeting of the Executive Committee in the year prior to the year of the work plan.

2. For example, the work plan for 2014 and the progress report for the first tranche of the HPPMP will be submitted to the last meeting in 2013. Funding will be transferred to the implementing agency upon approval of the work plan and not more than 30 per cent of this amount could be released to the Country before the approval of the verification report by the Executive Committee.

3. A final verification report for Stage I will be submitted in 2017 to verify 2016 production. The last tranche of Stage I will be disbursed in full upon the approval of the 2015 verification report by the Executive Committee.

APPENDIX 4-A: FORMAT OF IMPLEMENTATION REPORTS AND PLANS FOR STAGE I

1. The first implementation report and plan for stage I of the HPPMP will contain an addendum that takes into account the final level of funding for the total phase-out, and that approved for stage I, including the conditions of approval in decision 69/28(e). The addendum would further define the conditions of approval in particular with respect to how decision 69/28(e) would be implemented.

2. The submission of the implementation report and plan for each tranche request will consist of five parts:

(a) A narrative report, with data provided by calendar year, regarding the progress since the year prior to the previous report, reflecting the situation of the Country in regard to phase-out of the substances, how the different activities contribute to it, and how they relate to each other in Appendix 1-A. The report should include ODS phase-out as a direct result of the implementation of activities, by substance, to allow the Secretariat to provide the Executive Committee with information on the resulting change in climate-relevant emissions. It will address how the conditions of approval in decision 69/28(e) (paragraphs 4-12 of this Agreement) have been addressed, the actions/activities taken to achieve these conditions and their budgets both in the plan and the progress report. It will identify any redirection of phased-out production capacity, as specified in paragraph 3 of the Agreement that is compensated by the Agreement to production for feedstock use by plant and by plant line where applicable. The report and plan will indicate what capacities are closed and dismantled and the target for the next year. Controlled and feedstock production by plant line, if applicable, should be provided. The report should further highlight successes, experiences, and challenges related to the different activities included in the plan, reflecting any changes in the circumstances in the Country, and providing other relevant information. The report should also include information on and justification for any changes vis-à-vis the previously submitted annual implementation plan(s), such as delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided in paragraph 20 of this Agreement, or other changes. The narrative report will cover all relevant years specified in sub-paragraph 19(a) of this Agreement and may, in addition, include information on activities in the current year;

(b) A verification report on the results of the HPPMP and the production of the substances listed in Appendix 1-A, as per sub-paragraph 19(b) of this Agreement. Unless otherwise decided by the Executive Committee, such a verification shall be provided together with each tranche request and, as specified in sub-paragraph 19(a) of this Agreement, will provide verification of production for all relevant years for which a verification report has not yet been noted by the Executive Committee;

(c) A written description of the activities to be undertaken up to and including the year of the planned submission of the next tranche request, highlighting the interdependence of the activities, and taking into account experience gained and progress achieved in the implementation of earlier tranches; the data in the plan will be provided by calendar year. The description should also include a reference to the overall plan and progress achieved, as well as any possible changes to the overall plan that are foreseen. The description should cover the years specified in sub-paragraph 19(d) of this Agreement and also specify and explain in detail such changes to the overall plan. This description of future activities may be submitted as a part of the same document as the narrative report under sub-paragraph (a) above;

(d) A set of quantitative information for all annual implementation reports and annual implementation plans is to be submitted through an online database. This quantitative information, to be submitted by calendar year with each tranche request, will amend the narratives and description for the report (in accordance with sub-paragraph (a) above) and the plan (in accordance with sub-paragraph (c) above), the annual implementation plan and any changes to the overall plan, and will cover the same time periods and activities; and

(e) An executive summary of around five paragraphs is to be submitted in order to summarize the information required by sub-paragraphs (a) to (d) above.

APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES FOR STAGE I

1. The overall monitoring will be the responsibility of the National Ozone Unit (NOU). The production will be monitored based on semi-annual reports provided by HCFC producers and confirmation by the NOU.

2. The NOU will also be responsible for reporting and shall submit the following reports in a timely manner:

(a) Annual reports on production of each substance for controlled and feedstock uses to be submitted to the Ozone Secretariat;

(b) Annual reports on progress in implementation of the country programme, to be submitted to the Executive Committee; and

(c) Project-related reports to be submitted to the Lead IA.

3. The Lead IA will carry out independent annual verifications at all producers for which tonnage was included in paragraph 3 of the Agreement for the years 2013-2016 to confirm that the HCFC production phase-out targets at the country level have been met. Annual HCFC production will be verified by following the Executive Committee's Guidelines and Standard Format for Verification of ODS Production Phase-out using the Montreal Protocol's definition of production i.e. (a) HCFC production is equal to the total annual HCFC production minus the total amount of HCFCs used in feedstock applications. The verification reports will be submitted to the Executive Committee in accordance with paragraph 19 of this Agreement.

APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY FOR STAGE I

1. The Lead IA will be responsible for the overall supervision of the implementation of the stage I of the reduction in production of HCFCs under this Agreement. The Lead IA supervision will include at least the following:

(a) Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements, as set out in the Country's HPPMP and addendum;

(b) Assisting the Country in preparation of the implementation plans and subsequent reports, as per Appendix 4-A;

(c) Providing independent verification to the Executive Committee that the targets have been met and associated annual activities have been completed, as indicated in the implementation plan consistent with Appendix 4-A;

(d) Ensuring that experience and progress is reflected in updates of the overall plan and in future annual implementation plans, consistent with sub-paragraphs 2(c) and 2(d) of Appendix 4-A;

(e) Fulfilling the reporting requirements for the annual implementation reports, annual implementation plans and the overall plans, as specified in Appendix 4-A, for submission to the Executive Committee;

(f) Ensuring that appropriate independent technical experts carry out the technical reviews;

(g) Carrying out required supervision missions;

(h) Tracking implementation and use of funds to ensure that they are consistent with all the Lead IA policies and procedures, including safeguard policies, as well as Executive Committee policies and procedures and provisions of this Agreement;

(i) Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the implementation plan and accurate data reporting;

(j) In case of reductions in funding for failure to comply in accordance with paragraph 1 of this Agreement, to determine, in consultation with the Country, the allocation of the reductions to the different budget items and to the agency support cost of the Lead IA;

(k) Ensuring that disbursements made to the Country are based on the use of the indicators; and

(l) Providing assistance with policy, management and technical support, when required.

2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent entity to carry out the verification of the results and the production of the substances mentioned in Appendix 1-A, as per sub-paragraph 19(b) of this Agreement and sub-paragraph 2(b) of Appendix 4-A.

APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY FOR STAGE I

1. In accordance with paragraphs 12 and 24 of this Agreement, the amount of funding provided may be reduced by US$1.73 per kg/year of production beyond the level defined in row 1.2 of Appendix 2-A for each year from future funding tranches in which the target specified in row 1.2 of Appendix 2-A has not been met.

2. If any independent annual verification, as stipulated in paragraph 3 of Appendix 5-A to this Agreement, reveals that the phased out HCFC production capacity previously used for ODS production in 2010, as specified in paragraph 3 of the Agreement, in any HCFC production plants that are compensated by this Agreement is redirected to feedstock uses in a given year, the amount of funding may be reduced by US$0.15 per kg/year of redirected production from future funding.

Desk Study on the Current System of Monitoring Consumption of Foam Blowing Agent at Stage I HPMP Beneficiary Enterprises and Verification Methodology

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Desk Study on the Current System of Monitoring Consumption of Foam Blowing Agent at Stage I HPMP Beneficiary Enterprises and Verification Methodology

I. Introduction

A. ExCom Decision and Objective

1. At its 82nd meeting, the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol adopted Decision 82/67 on China's annual progress report for the polyurethane (PU) rigid foam sector plan under the Stage I HCFCs phase-out management plan (HPMP).

2. In line with Decision 82/67(c), the Government of China and the World Bank are requested to prepare for the 83rd meeting a desk study on the current system of monitoring consumption of foam blowing agents at enterprises assisted under the Stage I HPMP and a verification methodology that includes random sampling in order to ascertain whether ozone depleting substances (ODS) that has already been phased out have been or are being consumed at those enterprises.

B. Structure of the Report

3. In order to respond to Decision 82/67(c), the Government of China worked with the World Bank on the structure of the report. This report is organized into an introduction and four main chapters.

4. Chapter 2 deals with contextual information surrounding HCFCs phase-out in the PU foam sector and more generally ODS control in China, explaining the legal basis, policy framework and institutional structures, and capacity for ODS management at both national and local levels. Chapter 2 also introduces the experience and practices carried over from the previous PU foam sector phase-out plan, as well as an overview of current monitoring requirements and policy measures for the PU foam sector plan under China's Stage I HPMP.

5. Chapter 3 details the established HCFCs consumption monitoring system for PU foam in China, including consumption verification practice during the preparation of the HPMP, the overall arrangements for the implementation of the sector plan under the HPMP, the monitoring system through the subproject cycle, and the monitoring and enforcement measures after conversions. The contributions to the monitoring system through relevant technical assistance activities carried out under the Stage I HPMP sector plan are summarized under this chapter as well.

6. Chapter 4 summarizes the proven/best practices in monitoring and verification of consumption and phase-out in the PU foam sector in China, and also assesses gaps and identifies areas for strengthening.

7. Chapter 5 responds to Decision 82/67(c), that proposes a "verification methodology in order to ascertain whether ODS that had already been phased out had been or were being consumed at those enterprises assisted under the stage I of the HPMP." In this chapter, a proposed methodology, largely based on the current monitoring and verification mechanism applied under the Stage I HPMP, is presented. Additional measures, such as random sampling of foam products/pre-blended polyol and cross-regional checks, are considered as well, with the purpose to further strengthen monitoring and enforcement actions to ensure the sustainable phase-out of ODS in PU foam sector.

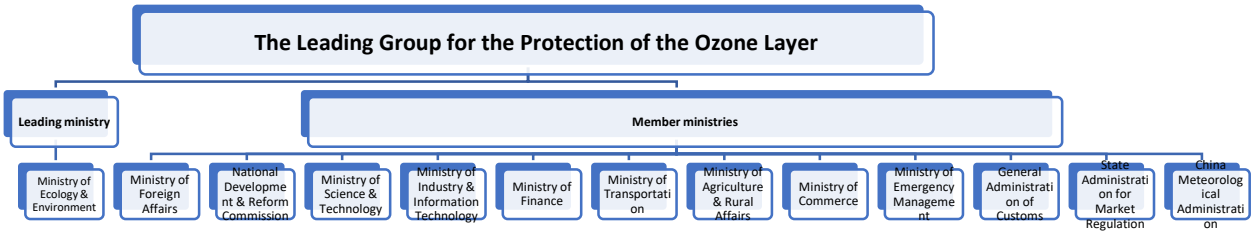
II. HCFCs Phase-out in China's PU Foam Sector – In Context

8. The Montreal Protocol mandates gradual HCFCs phase-out starting from 2013 until full phase-out of HCFCs consumption and production by 2030 for "Article 5" countries. Guided by a series of national strategies and strong political commitment, China has nearly completed implementation of the first stage of HCFCs phase-out, having met all major phase-out milestones and phased out 71,000 MT of HCFC production as well as 45,000 MT of HCFC consumption. China's HCFC phase-out efforts are rooted in a well-established institutional and regulatory framework on environmental protection and historical ODS phase-out plans. That relevant to sustainable HCFCs phase-out and monitoring in the PU foam sector is described below.

A. Institutional Structure for ODS Control in China

i. National-level institutional structure

9. *National Leading Group for the Protection of the Ozone Layer and its Office.* The National Leading Group for the Protection of the Ozone Layer (hereinafter referred to as the Leading Group) was set up in 1991 by the Government of China. The Leading Group is responsible for the coordination of critical matters related to the compliance with the Montreal Protocol, review of guiding principles and policies for compliance, review of the compliance programme and work plans and oversight of the implementation of the work plans, and dealing with emerging issues which require the considerations of the Leading Group. As the coordination mechanism for ozone layer protection at the central level consisting of 18 ministries at its beginning, the Leading Group has been adjusting its members with the institutional reforms of the Government of China in the past years. With the most recent restructuring of government agencies undertaken in 2018, the Leading Group is now composed of thirteen ministries. Ministry of Ecology and Environment (MEE, formerly known as MEP), as the leading ministry of the Leading Group, is responsible for the supervision and examination of the implementation of the Montreal Protocol, organization of compliance activities and formulation of policies and measures. Its specific work is undertaken by the Office of the leading group.



10. *National Office for Management of ODS Import and Export.* As another key body for ensuring compliance, National Office for Management of ODS Import and Export was co-established by three ministries, including MEE, Ministry of Commerce (MOC) and General Administration of Customs (GAC) in 2000. Its main responsibilities are the management of import and export of controlled substances, appliances and products in China through licensing, quotas and other measures. China is currently the largest ODS producer and exporter accounting for 80% of world exports, destined to more than 130 countries. The National Office has been acting as the lead coordination agency in ODS trade control in China, and has played a proactive role in information exchange, capacity building, law enforcement support and inter-agency cooperation.

11. *Coordination Group for the Compliance with the Montreal Protocol within MEE and its Office (National Ozone Unit).* Coordination Group for the Compliance with the Montreal Protocol within MEE (hereinafter referred to as the Coordination Group) consists of 9 departments and affiliated agencies of

MEE, whose specific work is undertaken by its Office. The Office of the Coordination Group, which undertakes the daily work of the Office of the Leading Group internally, functions as the National Ozone Unit (NOU) of China. As the national focal point of the Protocol and the MLF ExCom, the Office is responsible for daily liaison with the Ozone Secretariat, MLF Secretariat and the international implementing agencies. The Office of the Coordination Group is set up under the Department of Atmospheric Environment, MEE, with Department of Atmospheric Environment, Department of International Cooperation and FECO as members.

12. *Role of industrial association and research institutions*. The Government of China works closely with relevant industrial associations and research institutions, which include China Household Electrical Appliances Associations, China Refrigeration and Air-conditioning Industry Association, China Plastics Processing Industry Association (CPPIA, focusing on foam), China Association of Fluorine And Silicone Industry and Peking University. These technical support agencies contribute in large to data collection in sectors and of potential beneficiaries, as well as to the selection of conversion technologies, compilation of sector phase-out strategies, and development and preparation of phase-out project documents. Some provide consultancy services and assistance to relevant departments in the course of policy implementation for the compliance with the Montreal Protocol.

ii. Local Ecology and Environment Bureau (EEB) and other authorities

13. China is the world's most populated country and has a large geographic area. It takes efforts of both the central government and local governments to ensure sustainable compliance in the country. The Government of China, therefore, relies on local government to monitor and supervise ODS phase-out. Thirty-one provinces, autonomous regions and municipalities have each established analogous leading groups for ozone layer protection at the provincial level. These groups are responsible for: 1) interpreting, formulating and implementing related regulations and policies at local levels; 2) monitoring the production, consumption, import and export of controlled substances at local levels; 3) collecting ODS production and consumption data by pollutant emission registration and reporting systems; 4) controlling the construction and/or expansion of ODS producing or using facilities through a "construction projects management system" and environmental impact assessment; and, 5) enforcing local and state-level regulation and policy.

14. Departments of the EEBs, Development and Reform Commissions, Industrial and Commercial Bureaus, Public Security Bureaus and other competent authorities are also members of local leading groups in some provinces. It is mandated that local groups shall organize regular work meetings to coordinate the protection of the ozone layer within administrative regions. Local government at or above the county level, in accordance with the 2010 Regulations on Administration of Ozone Depleting Substances (hereinafter referred to as the Regulations), is responsible for the supervision and management of ODS production, use and phase-out within its jurisdiction. EEBs monitor ODS use, production, stockpiles, disposal and registration of all relevant companies, conduct inspections, enforce juridical authority to combat illegal use, production, disposal, and levy fines. Aside the responsibilities prescribed by the Regulations, local EEBs also volunteer to provide assistance for the implementation of sector plans under the HPMP, including mobilizing potential beneficiaries, cross checking production and consumption data, conducting environmental assessments and promoting alternative technologies.

iii. Interaction between State and local level competent authorities.

15. The interaction of State level competent authorities with local authorities revolves around the implementation and execution of overarching environmental and ODS laws and regulations (described in the next section). On the legislation side, the People's Congress issues laws, the State Council issues regulations, the line ministries issues orders or normative documents, and in turn the local levels will issue local policy documents with detailed implementation guidance. On the administrative side, the relationship

between the state and local level is more interactive. This is particularly the case on policy implementation, monitoring and enforcement.

B. Legal Basis and Policy Framework for HCFCs Management and Control in the Foam Sector

i. Relevant environmental laws

16. In recent years, the Government of China has taken a series of significant decisions and actions on promoting an "ecological civilization" and protecting the environment. To implement the strictest laws on ecological and environmental protection, China has promulgated or amended nearly twenty laws including the Law on Environmental Protection, the Law on Air Pollution Control and Prevention, and others. The Law on Environmental Protection, revised and issued by the National People's Congress in 2014 and effective in 2015, has recrafted the basic system of environmental protection in China. The most significant change with the amendment is reinforcement of the responsibility of the local government to ensure environmental quality. The law empowers local government to enforce rules and to crack down on illegal behavior, specifically through devolution of power and resources to environmental law enforcement departments for strengthened enforcement.

17. Article 85 of the 2015 revised Law on Air Pollution Control and Prevention stipulates: "The State encourages and supports the production and use of ODS alternatives, and the gradual reduction of the production and use of ODS until complete phase-out." "The State implements the total control amount and manages the quota for the production, use, import and export of ODS." The specific measures will be prescribed by the State Council In addition, Article 101 now stipulates the types of penalties and the punishment of maximum three times of the value of the goods for the production, import, sale or use of banned substances/equipment in violation of the provisions of relevant laws and regulations. If the offender refuses to make corrections, the local government is entitled to suspend its operation or close it down. Article 125 also stipulates those who discharge air pollutants causing damage shall bear the consequences according to relevant laws and regulations. The amendment interlinked ODS management with the overall air pollution control that enables the ODS monitoring and enforcement to be part of the holistic combat of air pollution for both national level and local levels. The amendment also provided strict enforcement tools for ODS violators that would face more severe punishment and penalties than before.

18. The amended Laws on Environmental Protection and on Air Pollution Control and Prevention therefore intensify punishment of illegal behaviors. And, given that they are superior to the ODS Regulations and relevant secondary rules and policy, they provide the legal authority for strengthened ODS supervision and management in the future.

ii. ODS Regulations, rule and policies

19. The ODS management regulations (Decree No. 573), approved at the 104th standing meeting of the State Council and effective since June 1, 2010, provide a systematic legal framework for ODS management in China. They reinforce the role of State-level departments in supervision and administration of ODS through-out China and stipulate that local EEBs and relevant departments at or above the county level shall be responsible for management and oversight of ODS within their regional jurisdictions. Most notably the regulations introduce a type of permitting/quota system for all ODS producers and users whereby enterprises must apply for and report on production and use under the competent environmental protection department of the State Council (MEE in this case). The 2010 Regulations also lay out the responsibilities of competent authorities and ODS producers/users in supervision and inspection, requirements for a sound ODS management data system and ranges, and describes the penal system including fines. For example, a

user of ODS without a permit is subject to a fine up to 500,000 yuan, along with the penalty of dismantling and destruction of the facilities using ODS.

20. More than 100 ODS supporting rules and policies have been formulated and issued at multiple levels throughout China in order to detail how to implement and to further strengthen ODS control. About fifteen of these relate directly to the foam sector. Most have been introduced in conjunction with the Stage I HPMP and HPPMP preparation and implementation (policies relevant to the HCFCs phase-out in the foam sector are found below in Table 1 under Section D). They consist primarily of orders (from the State Council) or "management letters" (from line ministries) to subordinate departments within the government or to outside entities in the private sector. For orders/letters within government institutions, their implementation is closely linked to annual performance reviews and promotions. In the case of the private sector, violation of management letters is governed by administrative laws. Punishment for such violation ranges from warnings to fines, administrative detention and business license revocation.

21. Now with the changes to the environmental and air pollution laws, local EEBs have more authority such as to conduct on-site visits and collect sample in enterprises, seal up illegal production facilities, and establish local standards in matters of regional environment monitoring and enforcement.

C. Experience and Practice from the Previous PU Foam Sector Phase-out Plan

i. Development of the system of verifying and monitoring consumption

22. Since the approval of the PU foam sector CFCs phase-out plan in 2001, China has employed some type of mechanism to verify consumption at conversion subprojects. In the earlier years of the sector plan, FECO had designated individual technical experts to conduct on-site verification prior to the signature of subgrant agreements (SGAs) with beneficiary enterprises, with the aim to identify the eligibility and baseline ODS consumption level of these enterprises.

23. As implementation of the sector plan evolved, more and more enterprises became involved in conversion activities. Due to this growing complexity as well as various financial and technical capacities of the enterprises, FECO decided to utilize an independent accounting firm to conduct baseline ODS consumption verification at enterprises. Focused primarily on reviewing records (purchase receipts, invoices, production logs, etc.), this third-party review offered FECO more neutrality while elevating the verification vis-à-vis the enterprises to a more official level.

24. Nonetheless, it was necessary to supplement the work of the accounting firm with foam manufacturing technical expertise and support, in order to corroborate the eligibility and baseline ODS consumption, with inspection of production facilities, storage areas and baseline equipment. This was especially the case at enterprises with less capacity for bookkeeping. The combined technical and performance verification became the foundation for effective subproject monitoring and reporting by FECO and its designated implementing support agency (ISA). In addition, random checks and inspections to examine the eligibility of the enterprises and identify any issues during the implementation by the World Bank as the MLF Implementing Agency were integrated into the monitoring framework developed under the CFCs phase-out plan in the foam sector.

25. As more subprojects completed and moved to "subproject acceptance," whereby local authorities officially declared converted operations were up to par with environmental and safety regulations, FECO recognized the potential of local EEBs to expand their roles to more targeted monitoring and supervision of ODS-consuming enterprises in the foam sector. FECO cooperated in particular with the four key provinces with the highest concentration of PU foam enterprises, namely Shan Dong, Jiang Su, Zhe Jiang and Guang Dong. With technical assistance funding, tasks for these provinces included training and

awareness raising regarding foam manufacturing in the region, active identification of additional eligible enterprises beyond those first covered by FECO, and most notably, undertaking regular monitoring and enforcement action in the sector.

26. By the end of the sector plan when China issued the ban on the use of CFCs as blowing agent in 2007, the key foam-producing provinces had been well-informed with the issues surrounding ODS phase-out and had the legal basis for taking over regular monitoring and supervision of CFCs phase-out in this sector. Moreover, through the subproject acceptance/handover process and ongoing TA to the EEBs, networks between regulatory authorities and major foam manufacturers could be established although there was no systematic procedure in place to register and track ODS-using enterprises.

ii. Lessons Learned

27. With the implementation of the CFCs phase-out plan for the PU foam sector, not only were ODS phase-out targets achieved but extensive experience was accumulated, in particular on verification and monitoring. This significantly contributed to the development of future HCFCs phase-out activities in this sector. Key lessons learned were:

- The combination of financial support and specific policy measures employed by the sector plan was not only an effective strategy for achieving timely ODS phase-out, it provided the underpinning for more regular monitoring by local authorities beyond the project
- The PU foam sector plan, including TA support to the EEBs to build relationships with the regulated community, as well as sector policy, also benefitted the beneficiaries that successfully converted to alternatives by creating a level playing field for them.
- Establishment of an effective policy system is critical to sustainable ODS phase-out but requires understanding of who is the regulated community for appropriate monitoring, enforcement and outreach over time.
- Involvement of local EEBs in the management and monitoring of ODS phase-out is key to long-term sustainability of sector and subsector conversions. Local EEBs played a key role in ODS management, particularly in the enforcement after awareness, technical and policy capacity building provided by the project.
- Baseline consumption verification conducted by independent accounting firms prior to the signature of SGAs and performance and financial verification during the implementation is important to ensure the smooth execution of subprojects as well as verifiable achievement of phase-out targets.
- Public awareness on ODS phase-out and participation of individuals and industry in carrying out activities to protect the ozone layer needs to be continuously promoted beyond the confines of a project, especially where there are differences in timing and ODS targeted for phase-out.
- Various technical assistance activities carried out under the sector plan, particularly foam enterprise training and technical research and studies, were a notable complement to ODS phase-out subprojects. They facilitated access to and promoted adoption of alternative technologies at a large number of foam enterprises.

D. The PU Foam Sector Plan under China's Stage I HPMP

28. The PU foam sector plan under China's Stage I HPMP was prepared by FECO in affiliation with MEE and with the assistance of the World Bank. It was submitted to the 62nd ExCom meeting for approval in August 2010. A total of US$73,000,000 was approved by the 64th ExCom meeting in 2011 to support HCFC-141b phase-out activities in the PU foam sector in China, in order to achieve the national baseline consumption freeze target by 2013 and the 10% reduction target by 2015.

i. Approval Decision and China-Executive Committee Agreement

29. At its 64th meeting, the Executive Committee adopted Decision 64/49 approving China's Stage I HPMP. A draft agreement between the Government of China and the Executive Committee for the reduction in consumption of HCFCs (hereinafter referred to as "the Agreement") was also approved. Subsequently, the agreement was revised twice at the 66th and 67th ExCom meetings through Decisions 66/15(h) and 67/20 to primarily update Appendix 5-A on "monitoring institutions and roles," and to include China's Article 7 reported HCFCs baseline. Appendix 2-A of the Agreement defines the Montreal Protocol HCFCs reduction schedule, the maximum allowable HCFCs consumption and the maximum allowable HCFCs consumption in the PU foam sector in China, respectively. China committed to phase-out 942.6 ODP tons of HCFC-141b by 2015 as indicated in the following table. Decision text related to the Stage I PU foam sector plan is found in Annex 1.

		2011	2012	2013	2014	2015	Total
1.1	**Montreal Protocol reduction schedule of HCFCs (ODP tonnes)**	n/a	n/a	19,269.0	19,269.0	17,342.1	n/a
1.2	**Maximum allowable total consumption of HCFCs (ODP tonnes)**	n/a	n/a	18,865.4	18,865.4	16,978.9	n/a
1.3.3	**Maximum allowable consumption in the PU foam sector (ODP tonnes)**	n/a	n/a	5,392.2	5,392.2	4,449.6	n/a

ii. Monitoring and verification requirements and other related provisions per the Agreement

30. The Agreement sets forth monitoring and verification requirements in order to ensure sustained achievement of agreed HPMP consumption reduction commitments as captured above. Compliance with the Agreement is assured through two mechanisms. First, in accordance with the Agreement, China must accept independent verification of completion of the conversion of manufacturing capacity as well as achievement of annual HCFCs consumption limits as set out in row 1.2 of Appendix 2-A of the Agreement. Independent verification is one of the preconditions for the release of tranches for the sector plan after China meets the target set out in row 1.2 of Appendix 2-A of a given year. Specifically, in line with Article 5 (b) (i) of the Agreement, a verification report of a random sample of at least 5% of the manufacturing lines which have completed conversion in the year to be verified must be submitted to the ExCom, on the understanding that the total aggregated HCFCs consumption of the random sample of the manufacturing lines represents at least 10% of the sector consumption phased out in that year.

31. Second, the Agreement requires that China conducts accurate monitoring of its activities under the Agreement, while establishing and maintaining a system to monitor HCFCs consumption in different sectors. The institutions identified in Appendix 5-A, namely FECO and MEE, should monitor and report on the implementation of the activities in previous annual implementation plans as set out in appendix. Activities monitored are also subject to independent verification and comprise, per Appendix 5-A, the following:

- FECO/MEP is responsible for the overall co-ordination of activities to be undertaken in the HPMP with assistance of the Lead IA and acts as the National Ozone Unit, responsible for carrying out national policies and legislation on ODS control.
- National consumption will be monitored and determined based on production data and official import and export data for substances recorded by relevant government departments in line with the Agreement.

- In addition to the national system of licensing and quotas for HCFCs imports, production, and exports, a quota system covering enterprises using large quantities of HCFCs in the different consumption sectors, will be established to control consumption growth, achieve the consumption reduction in these enterprises and collect consumption data.
- For sectors with large amounts of small and medium enterprises (SMEs), like in the PU foam sector, the consumption is managed by limiting quantities of HCFC-141b to be sold to the domestic market.
- FECO/MEP will closely supervise enterprises carrying out Stage I HPMP conversion activities to ensure the phase-out target in these enterprises has been achieved.
- FECO/MEP will co-ordinate with the Lead IA and Cooperating IAs to facilitate the verification of the targets set in the Agreement.

32. In case for any reason China did not meet the reduction targets or otherwise comply with the Agreement despite monitoring measures, it would not be entitled to future funding per the approval schedule. In addition, Appendix 7-A imposes a penalty provision whereby funding provided might be reduced by US$160 per ODP kg of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target had not been met.

iii. HPMP and HCFCs foam sector policy measures

33. In line with Appendix 5-A of the Agreement and in addition to the national system of licensing and quotas for HCFCs imports, production and exports, a quota system covering enterprises using large quantities of HCFCs in the different consumption sectors, should be established to control the consumption growth, achieve the consumption reduction in those enterprises and collect consumption data.

34. In response to above requirement to effectively control the consumption growth of HCFCs, on August 7, 2013, MEE issued the Circular on the Management of HCFCs production, sales and consumption under the 2010 ODS Regulations. The circular presented a division of labor according to consumption levels whereby HCFCs consumers with more than 100 MT of annual HCFCs consumption for controlled uses should apply for and hold quota permits with MEE, while those with less than 100 MT of annual HCFCs consumption for controlled uses should register with provincial environmental protection agencies. MEE is responsible for the formulation of the overall quota allocation scheme for each year. HCFCs distributors, including system houses in the PU foam sector, with sales volume of HCFCs over 1000 MT must register with MEE whereas all HCFCs distributors under this threshold must register with local competent environmental protection agencies.

35. In terms of process, the Regulations and the Circular require that HCFC-consuming enterprises over 100 MT apply to MEE for a quota for the next year before October 31 of each year, and submit supporting documentation proving that the enterprise is eligible for consuming HCFCs, has obtained places, facilities, equipment and professional technicians that can utilize HCFCs for manufacturing, and has approved environmental protection facilities and a sound internal management system.

36. The MEE then evaluates the annual allowable production limits of HCFCs and the market's need for HCFCs among different sectors and reviews the consumption quotas from the applicants for the next year. MEE shall complete the review before December 20. Only when the applicants meet the requirements, MEE issues the consumption quota license for the next year. MEE also copies the relevant provincial EEBs where the enterprises are located on this issuance. In case of the rejection of the application, MEE notifies the applicant in writing with the reasons.

HCFCs registration practice in Shanghai

Shanghai has established the HCFCs registration system since 2013, in accordance with 2010 ODS Regulations and *the Circular on the Management of HCFCs production, sales and consumption* issued by MEE. In 2014, Shanghai issued *the Circular on the Registration Management of HCFCs production, consumption, sales and servicing at its municipality level*. Each year, Shanghai published the notification on the registration management and disclosed the results of registration to public.

Shanghai so far has developed online registration system, and the operation of the system is proven effective and efficient. The registration information includes the basic information of enterprises, sectors/applications, species of HCFCs, the amount of HCFCs consumption/sales, etc.

Summary of HCFC registration information in Shanghai from 2013-2018

Year		2013	2014	2015	2016	2017	2018
Sectors		Number of enterprises					
Feedstock use		6	7	6	5	3	2
Controlled uses	Solvent	15	15	13	13	10	11
	Foam	15	15	14	14	15	16
	Refrigeration	20	19	19	19	16	15
Sales		41	46	47	48	44	33
Total		95	100	97	97	88	77

37. Aside the policy measures required in the Agreement, the PU foam sector plan under the Stage I HPMP also proposed targeted policy and regulatory measures to promote HCFCs phase-out at the subsector level to ensure sustainable phase-out and a level playing field. The PU foam sector plan prioritized the refrigerated container and reefer, refrigerator and freezer, and electrical water-heater subsectors. In October 2018, MEE issued *the Ban on the Use of HCFC-141b as Blowing Agent in Manufacturing of Products in Refrigerated Container and Reefer Sub-sector, Refrigerator and Freezer Sub-sector and Electrical Water-heater Subsector*. Since January 1st, 2019, no enterprise is permitted to use HCFC-141b as blowing agent for these types of products. Any violation will result in financial penalties of up to 500,000 yuan, possibly along with the penalty of dismantling and destruction of the facilities using ODS.

Table 1. National Level ODS Supporting Policies Currently Relevant to the PU Foam Sector

Classification	Policy	Time of Issuance	Effective Date	Issuer
Production control	Management notice on construction projects of ODS production and use (No.[2018] 5)	2018.1.24	2018.1.24	MEP
	Management notice on the strengthening of HCFCs production, sale and use (No. [2013] 179)	2013.8.7	2013.8.7	MEP
Import and export control	Management Measures of Import and Export on ODS (revised)	2014.1.21	2014.3.1	MEP, MOC, Custom
	China import and export list of controlled ODS (six batches)	2000/2001/2004/ 2006/2009/2012	2000/2001/2004/ 2006/2009/2012	MEP, MOC, Custom

Consumption control	The ban on the use of CFCs as blowing agents in foam sector (No.2007 [45])	2007	2008.1.1	MEP
	The ban on the production, sale, import and export of electrical household appliances using CFCs as refrigerants or blowing agents (No.2007 [200])	2007	2007.7.1	MEP, NDRC, MOC, GAC, etc.
	Announcement on the ban on the production of refrigerator freezer products, refrigerated container products and electric water heater products with HCFC-141b as blowing agent (No.2018 [49])	2018.10.18	2019.1.1	MEE
	Management notice on the strengthening of HCFCs production, sale and use (No. [2013] 179)	2013.8.7	2013.8.7	MEP
Sales management	Management notice on the strengthening of HCFCs production, sale and use (No. [2013] 179)	2013.8.7	2013.8.7	MEP

III. Established HCFCs Consumption Monitoring System for PU Foam

38. Now entering into the third comprehensive ODS phase-out sector plan for the foam sector, FECO is continuing to use and in some cases fine tune its system of monitoring and verification of HCFCs consumption and HCFCs phase-out through the overall project, and subproject cycles. Foam beneficiaries, once applying to participate in the project through completion and "subproject acceptance," are visited in total a minimum of 7 times by FECO, the World Bank, the ISA, the accounting/verification firm, technical consultants and local environmental and public security officials. Beneficiaries in turn must report their HCFCs consumption, among other data, on an annual basis to FECO up to subproject acceptance while registering with local EEBs during HCFC consumption. The established system is detailed below along the subproject cycle through hand-over to the provinces and other local authorities that are responsible for monitoring all ODS producers and users in parallel to the cohort of enterprises that take part in the foam sector plan. Along with the technical assistance (TA) for creating the enabling environment and supporting sustainable conversions, the overall sector plan is the underpinning to, as well as catalyst for longer term, sustained HCFCs phase-out.

A. Understanding the Scope of HCFCs Use in the PU Foam Sector

39. The basis for not only determining priority subproject conversions for support under the HPMP, but also for monitoring HCFCs use in the foam sector, is an understanding of the market and enterprises that exist across subsectors. A bottom-up sector survey with on-site corroboration of a certain sample size of PU foam manufacturers, system houses companies was the primary resource that reflected HCFC-141b consumption levels and distribution of different applications.

40. However, FECO, along with industrial associations and independent consultants devised an additional methodology to quickly validate the overall findings of the survey of the scale of foam manufacturers, namely a mass balance of raw materials. By obtaining MDI consumption levels from market research companies and with the known ratio between MDI and polyols, the consumption of PU foam polyol was calculated. Subsequently, HCFC-141b consumption in each subsector was calculated using a common product ratio between polyols and HCFC-141b blowing agent. The figures of non-HCFC-141b blowing agents used in some subsectors were determined by the information obtained from chemical suppliers, the main consumers in the concerned subsectors, and cross-checked by the associations and sector experts, and then subsequently deducted. The results of the mass balance calculation were cross-checked with China's annual HCFCs production as well as discussed with sector experts and industrial

representatives from foam manufacturers and system house companies. Use of this tool provided FECO and stakeholders (associations, local EEBs etc.) better confidence in the overall scale and scope of ODS use in the foam sector to start with.

B. Stage I HCFCs Consumption Phase-out Project Arrangements

i. Environmental and social safeguard provisions

41. As the MLF implementing agency for the Stage I HPMP PU foam sector plan, the World Bank requires, in line with its safeguard policies, that an environmental and social safeguard framework be prepared and publicly disclosed by FECO before the overall HCFCs phase-out project Grant Agreement is signed between the Government of China and the Bank. The safeguards framework looks at China's environmental regulations and labor laws relevant to the project and evaluates potential environmental and social risks that may occur during project implementation. In the case of the Stage I HPMP, the framework lays out the required actions and procedures for beneficiaries to follow surrounding their PU foam conversions, taking into account all identified risks, to avoid or mitigate any negative impacts.

42. Consequently, all potential beneficiaries must prepare an environmental management plan (EMP) under the framework and inform the local EEB of plans to convert from HCFC-141b prior to starting conversion. An enterprise may be required to conduct anew an environmental impact assessment prior to conversion and receive an acceptance visit from local EEB or independent experts following local EEB instructions. The safeguard framework allows the local authorities to be aware of the conversion activities at the early stage of each subproject and include them in the ODS monitoring plan. Moreover, in the preparation and FECO acceptance of EMPs, related environmental impacts are identified on site. This serves as an additional check on the use of all hazardous and controlled substances that enterprises may be using in their operations.

ii. Project implementation manual

43. The annual programs that are prepared by FECO and submitted to the ExCom for approval each year provide a summary of the phase-out impacts achieved through policy actions, investments, and technical assistance (TA) activities and identify the next planned actions. However, it is the project implementation manual (PIM), developed before launching HPMP implementation that details how implementation will proceed from subproject appraisal to standardized procedures for conversions, to monitoring and reporting steps and frequency. The PIM serves as a one-stop guide for both FECO and beneficiaries, capturing fiduciary and safeguard responsibilities, key ExCom decisions and policies, operational procedures, and various reporting templates.

44. According to the PIM, FECO is responsible for implementation and supervision of the sector plan, as well as subprojects along with technical support by the ISA. The World Bank and an independent verification agency are responsible for review and monitoring phase-out activities, including technical, social and environmental aspects. The local EEBs are responsible for supervision and inspection of foam enterprises during and after subprojects. Consumption verification activities in particular may be assigned to different implementing entities due to the varied nature of the tasks. Monitoring and verification under the HPMP and as detailed in the PIM are illustrated in the following table.

Table II. Monitoring and Verification under HCFC-141b Phase-out Activities under the HPMP

Project Activities	Monitoring and Verification Actions	Results of Monitoring and Verification Actions	Verification Implementer(s)
Control HCFC-141b consumption in the PU foam sector	• Verify the annual production, import and export of HCFC-141b	• Compliance with annual control target of HCFC-141b is confirmed; • HCFC-141b consumption in foam sector is determined.	World Bank, FECO
Fulfillment of annual program	• Annual financial audit of the sector plan; • Inspection and verification of completed subprojects.	• Progress reports (implementation status of TA contract and phase-out sub-project and policy measures, etc.) were submitted to ExCom; • AP Approved by ExCom; • Performance verification report and financial audit report concluded.	World Bank, FECO
Subproject financial and technical appraisal	• On-site baseline consumption verification; • Supporting documents on HCFC consumption, such as invoice, procurement contracts, production volume; • Visual check of baseline equipment, and storage of pre-blend polyols and blowing agent; • Evidence of starting business with HCFCs before the cut-off date (2007.9.21) reviewed.	• Baseline consumption of HCFC-141b verified; • Eligibility of the enterprise confirmed.	ISA, selected accounting firm, independent experts, FECO
Subproject proposal evaluation	• Evaluation of the implementation plans prepared by enterprises in terms of cost effectiveness, feasibility of the selected alternative technology procurement plan, budget, and implementation schedule.	• Sub-grant funding level determined; • Appropriate alternative technology identified; • Feasibility of subproject proposal evaluated; • EMP, ECP and/or RAP* prepared if needed.	The evaluation panel, including ISA, independent sector experts, safety experts and FECO
Subproject implementation through completion	• Random site visits to beneficiary enterprises; • Onsite inspection of production lines; • Interviews with beneficiaries.	• Subproject implementation progress examined; • Technical or financial issues discussed; • Compliance with Executive Committee checked; • Environmental and social due diligence issues related to World Bank management reviewed.	World Bank task team
Subproject conversion	• On-site technical verifications against milestones set in SGA; • On-site check for procured/retrofitted equipment; • On-site check for safety measures; • Review material purchase; documents and disbursement status; • Interview on technical aspects.	• Consistency of supply contract and installed equipment checked; • Safety modifications inspected; • Trial run with new alternatives checked; • Disbursement status and supporting documents examined.	ISA and independent safety experts

Subproject Beneficiary financial performance verification	• Performance and financial verifications during the conversion; • On-site financial verification of disbursement related to the subproject; • Verification of the halt in use of HCFC-141b; • Verification of blowing agent/pre-blend polyols purchased; • Confirm status of the baseline equipment (dismantled or not);	• Disbursement of ICC and/or IOC has reached 90% of the funding level confirmed; • Operation status after conversion confirmed; • The cut-off date of no more HCFC-141b consumption checked.	Selected accounting firm, independent experts
Subproject acceptance	• Subproject acceptance; • Review subproject completion report; • Onsite inspection of production lines; • Interview with beneficiaries.	• Smooth production after conversion demonstrated; • Environmental and/or safety approval following local regulations checked; • Environmental and social due diligence examined; • Enterprise commitment to no longer use ODS re-emphasized. • Disposal of baseline equipment (where applicable) verified.	FECO, ISA, technical experts, local officials
TA activities	• Commissioning, execution and acceptance of TA activities.	• TA implementation progress reviewed; • Outcomes that can facilitate sustainable HCFC-141b phase-out in the sector generated and evaluated.	FECO, ISA, and technical experts (where applicable)
Post Subproject Phase-out inspections	• Regular monitoring and enforcement post subproject acceptance (or for EIA renewal); • Onsite inspection od compliance with national/local ODS management regulations.	• Quota for annual ODS consumption received, or enterprise is registered in the region; • Compliance with national/local ODS management regulations; • Blowing agents used by enterprises sampled, tested and inspected; • Legal enforcement carried out if deviations from national ODS regulations.	MEE and local EEBs

EMP=environment management plan; ECP= environmental code of practice; and RAP = resettlement action plan

45. In addition to the monitoring and verification that takes place at the above project junctures, there are secondary opportunities to support monitoring and verification of ODS phase-out. For example, in procurement "prior" reviews by the World Bank per its requirements, there may be areas in the proposed terms of reference for a monitoring activity that can be strengthened. Or, a procurement review by FECO of beneficiary enterprises may lead to a recommendation in specifications that will enhance sustainability of the conversion.

C. Monitoring system through the subproject cycle

i. Subproject baseline verification

46. According to the requirement from the PIM, each enterprise that applies for MLF support through a subproject proposal under the Stage I HPMP requires on-site verification organized by FECO. A two-

prong verification approach as described for the CFCs foam sector plan in Chapter II is still employed with both independent financial and technical experts who are selected by FECO through an open and competitive selection process. According to the consultancy TOR, the financial expert goes through the HCFC-141b purchase invoices to determine the baseline HCFC-141b consumption in the enterprise. The expert also checks the enterprise's bank transfer records, warehouse inventory, and other supporting documentation to verify its baseline consumption. Concurrently, a technical expert is responsible for analyzing and determining the HCFC-141b consumption for the last three years based on production data, while addressing any technical issues that may arise during the verification. The technical expert also helps evaluate whether HCFCs consumption is congruent with the enterprise's production capacity. After the verification team collects data on the enterprise's eligibility, baseline consumption and equipment, and other information pertinent to ExCom decision and the PIM, as well as photographs the manufacturing site and verification, all verification documents are copied and stamped by the enterprise.

47. The consumption verification results are reflected in financial and technical reports prepared by the team members respectively and submitted to FECO. FECO will in turn review and confirm the eligible funding in accordance with the PIM and ExCom decision.

ii. Commitment of subproject beneficiaries to permanently stop the use of HCFCs

48. After the baseline consumption is determined, the beneficiary enterprise drafts and submits an implementation plan illustrating its selection of HCFC-141b alternative technologies, conversion schedule, procurement plan, budget plus counterpart funding, and others. The implementation plan is evaluated and approved by the evaluation panel organized by FECO, with the participation of technical experts, safety experts, ISA and FECO. Particularly important to the sustainability of the conversion is a signed commitment letter by the enterprise to completely phase out HCFC-141b in addition to the SGA that FECO signs with each beneficiary enterprise. In both the SGA and commitment letter, there are provisions that maintain if the beneficiary enterprise fails to stop the use of HCFC-141b and/or continues to use other ODS already phased out, it would be a breach of contract. In such a case, FECO has the right to take actions against the beneficiary such as requiring it to immediately correct its breach and pay a breach penalty of up to 10% of the SGA's value, suspending further disbursement to the enterprise, or unilaterally terminating the SGA and requiring an immediate return of all subproject proceeds. There have been no breaches to date under the Stage I HPMP foam sector plan.

iii. Monitoring during subproject implementation to physical completion

49. Once the subgrant agreement is signed with the beneficiary enterprise, it will start conversion activities in line with the approved implementation plan, and apply for onsite verifications by the ISA, safety experts and selected accounting firm for certain technical and financial milestones that are specified in the SGA, for example, the completion of installation and trial runs of converted production lines, the physical completion, and the fulfillment of IOC. In addition, beneficiaries are required to submit on an annual basis from the time of SGA signing through subproject acceptance, HCFC-141b and alternative consumption amounts to FECO and ISA by email. This way FECO can monitor the gradual phase-out of the beneficiaries and report in semi-progress reports to the World Bank and annual programs to the ExCom.

50. After the beneficiary enterprise has completed the installation of new equipment for alternative technologies and completed the trial runs with the alternatives, the implementation support agency will conduct another on-site verification to check that the installed equipment is in line with the subproject's implementation plan, and the specifications in the procurement contract between the beneficiary and equipment supplier. If a discrepancy is detected during the verification, the ISA would require the beneficiary to submit to FECO explanations which may be supplemented by the ISA's justification from the technical perspective. The ISA also interviews the enterprise and goes through the documentation such

as production logs, raw material procurement invoices and other supporting documents to make sure that the beneficiary is operating well with the alternative technology. After the verification, the ISA shall include the findings in a verification report and submit to FECO. The ISA verification report is one of the milestones to trigger further disbursement to the beneficiary in accordance with the SGA.

51. After the beneficiary passed the ISA verification and disbursed over 90% of the funding, an independent consulting firm will conduct an onsite financial performance verification. This verification focuses more on the appropriate use of MLF grants and timely suspension of HCFC-141b use. The verification scope includes collecting HCFC-141b consumption and procurement information after SGA signature, the end point of purchasing HCFC-141b, and the data on exhausting all HCFC-141b stock at the enterprise. The firm also verifies the payment made to the equipment and raw material suppliers, disbursement records, purchase invoices, and disposal of baseline equipment (as an asset). The enterprise's financial records, including sales and production volume of the final products, as well as the sales contracts and the products based on alternatives are verified along with the documentation cited above. The financial verification confirms that the MLF grant allocated to the beneficiary has been used in accordance with the SGA and that the enterprise has fulfilled all its SGA obligations.

52. During the time of physical completion and awaiting the onsite verification, an enterprise that has converted to cyclo-pentane must notify local authorities for relevant approvals related to safety and environmental management.

iv. Subproject acceptance

53. After the beneficiary completes all the conversion activities, successfully adopts the alternative technology, passed the ISA onsite verification and financial performance verification, and gained the required approval from the local EEB and other authorities as required, the beneficiary may apply for subproject acceptance. In the application to FECO, the beneficiary also needs to provide its subproject completion report that specifies the phase-out impact, conversion milestones, annual HCFC-141b consumption during the implementation period, and consumption of alternatives, among others. FECO then organizes a commissioning team which is composed of local EEB officers, members from FECO and the ISA, and technical experts invited FECO who also serve to lead the commissioning team and who also will usually conduct the on-site acceptance. The commissioning team interviews the enterprise on its experiences, checks production with alternatives, and, goes through the verification reports, approvals from local authorities and other documents to make sure the beneficiary has completed all conversion activities without breaching the SGA. After internal discussion, the commissioning team announces that the beneficiary has passed the subproject acceptance, and then FECO will issue the certificate accordingly.

v. Post conversion

54. Once the beneficiary enterprise receives acceptance through FECO, the local EEB assumes responsibility of long-term monitoring of the enterprise's continued compliance with agreement provisions. FECO is to provide the list of enterprises that have completed conversions to relevant provincial EEBs, and provincial EEBs are to deliver the information to the local levels. Enterprises on the list can neither apply for HCFC-141b quota nor register HCFC-141b consumption at the provincial level. The EEBs are to include these enterprises in their monitoring and enforcement plans.

55. Aside regular EEB monitoring, all beneficiary enterprises are obliged to receive inspections from the World Bank as the IA. The World Bank inspections are done time to time at converted enterprises during the life of the overall project.

D. Ensuring Sustainable Phase-out

i. Institutionalized measures

56. The basis for longer-term, regular monitoring of foam enterprises in China using MP controlled substances is the 2013 circular under the ODS management regulations that establishes consumption quotas and registries. As explained in Chapter II, PU foam enterprises that consume over 100 MT of HCFC-141b annually are controlled at the national level by MEE and shall therefore apply in writing or through MEE's online system with supporting documents for an annual consumption quota before October 31 of the previous year. The MEE shall, in accordance with the annual production quotas of HCFCs and market need for HCFCs among different sectors, review the consumption quotas from the applicants before December 20th. If applying enterprise meets the requirements, MEE will issue the consumption quota licenses to enterprises meeting eligibility requirements while copying the relevant provincial EEBs. Similarly, if MEE rejects the application it will notify the applicant in writing why and request the applicant to register at provincial EEB.

57. Additional links between national and provincial level regulators are the notices and instructions sent by MEE for regional execution. A major instruction sent by MEE is the registration requirement of all HCFCs consumers across all sectors. PU foam enterprises with annual HCFC-141b consumption less than 100 MT must register consumption with supporting documents each year with the provincial EEBs which in turn conduct their review. HCFC consuming enterprises must keep relevant original data for more than three years for inspections (i.e. production logs, sales reports and invoices, financial statements, production operation records, accounts of main raw materials and products, and warehouse accounts).

ii. Monitoring and enforcement actions

58. Following the roles and responsibilities described in Chapter II, the Atmospheric Environment Department of MEE is mandated to lead in ODS management and monitoring. It consequently develops general work plans, evaluates and executes policy actions on HCFCs, organizes training for national and local focal points and coordinates with other departments and agencies. The Department will also instruct the Enforcement Bureau to organize on-site inspections at ODS related enterprises and impose penalties in case of any violation detected. MEE's inspections and enforcement are usually for the most urgent or serious issues and high-risk areas.

59. Monitoring at the local level occurs through several channels. Local EEBs may be instructed through special national or provincial level notices to conduct special inspections of foam enterprises. As the institutional organization and mandates basically mirrors the MEE structure and functions at the national level, local EEBs will assemble similar teams for developing work plans, or to monitor or conduct inspections and enforcement actions. For instance, the atmospheric environment branch or other branch who owns the ODS management mandates usually takes the lead role, develops work plans and coordinates with other agencies. EEB's monitoring branches are involved to collect samples and test the components in the samples. The enforcement team is in charge of the on-site inspections, and punishes the enterprise that violates the regulations in accordance with the penalties specified in the ODS Management Regulation.

60. For HCFCs production and use, monitoring actions will therefore fall under (a) regular monitoring and inspections related to general pollution, and (b) special actions specifically targeting HCFCs and MP controlled substances.

61. Regular monitoring and inspections on general pollution issues by local (city/county/district level) EEBs starts with obtaining lists of enterprises primarily from EIA reports registered in the region. As the EIA identifies what type of environmental management rules that need to be followed, enterprises

established as HCFCs users will be included per the ODS management regulations. Local EEB inspectors focus on whether the production process is in line with the approved process, whether the raw materials used comply with the EIA and environmental regulations, and check on essential facilities that control air emissions, water effluents and waste management. The inspectors go through the production data and other documentation, as well as conduct visual inspection of the production line and warehouse. ODS use would be flagged even if the enterprise was not classified as an ODS user per the EIA. Samples are collected and tested by qualified institutions when inspectors are suspicious of a contravention. In case of being an HCFCs user, the enterprise would be punished with a fine of up to 500,000 yuan if it had not applied for a quota from MEE and did not register with the provincial EEB, or with a fine of up to 200,000 yuan if its HCFCs consumption exceeds the type, quantity, applications or term of validity in the issued quota or information registered on provincial level.

62. Special actions targeting HCFCs are also designed and implemented by provincial EEBs since the establishment of HCFC registration systems. A special action will first come up in a work plan targeting specific enterprises or sectors. For instance, a PU foam enterprise list will be compiled from registered HCFC-141b consuming foam enterprises and system houses, the list of MLF beneficiary enterprises provided by FECO, as well as the information collected from previous surveys and provided by industrial associations. Then monitoring actions will be conducted by provincial inspectors and local inspectors together. The inspectors will primarily look into the enterprise's compliance with issued quotas or registered information, and visually inspect the production data, purchase invoices and warehouse accounts. The inspectors may also take samples from production lines, final products, and raw material from the warehouse. The sample will be sealed with signatures and sent to qualified institutions to test the foam blowing agent.

Implementation of MRV in Zhejiang Province

Organizational structure and legal basis

A provincial ODS management leadership team has been established in the EEB in Zhejiang Province and is made up of the air and environmental management division, policy and regulation division, enforcement team, the public awareness and education division, and the monitoring and environmental centers. There are about 100 people involved in ODS management in the Province. The air and environmental management division is the lead for ODS management, which mirrors the same arrangement at the Ministry level.

The basis for all actions on ODS management, specifically HCFCs, is ODS management regulations and policies at national level, including the MEE regulation on HCFCs quota management. Provincial EEBs in turn interpret and execute them based on their local circumstances. The Zhejiang Provincial EEB accordingly issued an ODS regulation in 2017 that strengthens HCFCs production and consumption management. A series of notices were issued to each city and county level EEB under the new rules.

Registry of HCFCs producers and consumers

According to the regulation issued by Zhejiang EEB, all HCFCs producers and users across all sectors should be subject to the registration. The registry includes consumption levels as determined by invoices, sales, the application and subsector. All consumers must register regardless of the amount of HCFCs consumption. Sellers and distributors with sales of above 1 MT must also register.

An online registry has been created and put into use whereby all enterprises must log-in to register production, consumption, and sales (with supporting documentation) by the end of January of a given year. By 15 February the county level EEBs must complete the verification of uploaded documents and by the end of February, the city level EEBs will have registered enterprises. Information is subsequently publicly disclosed. If an enterprise has not registered in two years and is still producing or using HCFCs, it will be fined.

Under the first phase of the EEB capacity building activity in 2007, lists of HCFCs enterprises were already collected, and updated and revised on an ongoing basis. Local EEBs were informed that they must inform new enterprises of this registration system. So far, there are 246 companies registered in Zhejiang Province registry system. FECO has regular communication with local EEBs on the status of conversion sub-projects and it informs EEBs when such subprojects are completed, with the purpose to extending the list of enterprises to be monitored.

Regular ODS monitoring and enforcement system in Zhejiang

In Zhejiang, there are around 90 districts and county units and some regions have more enterprises than others so the average number of monitoring and enforcement officers is about five in less concentrated areas and 10-20 persons for more concentrated districts. These officials cover all environmental issues, not just HCFCs producing/using companies. There are inspectors at multiple levels; higher levels (MEE, Provincial EEB) can also do spot checks but this usually for the most urgent or serious issues and high-risk areas. And the regular monitoring and enforcement actions are usually taken place at city or county levels. The method of inspection includes checking production logs as well as financial records to cross check. Business licenses and other documents to prove the enterprise's legality will also be checked. Sample of products/raw materials are collected for testing when needed.

In the 2018, all 246 enterprises in the registry and completed conversion subprojects had been inspected. Zhejiang EEB incorporates monitoring and supervision in the regular monitoring. The local government will provide budget (against a work plan) to regular ODS monitoring and supervision, because it is now a provincial regulation. The regulation states inspection shall be done at least once a year.

E. Stage I PU Foam Sector Plan TA

i. Subsector HCFCs phase-out impact assessment

63. Technical assistance in the PU foam sector plan, enabled delivery of China's Stage I HCFC-141b phase-out strategy starting first with impact assessment on the industry first targeted. China Household Electrical Appliance Association (CHEAA) was selected to conduct an impact study on how the ban would affect the three targeted subsectors (reefer containers, refrigerators/freezers, and small appliances). Based on surveys, on-site interviews, information on HCFC-141b consumption, technical capacity for using alternatives, and cost impacts, the assessment concluded that banning HCFC-141b as blowing agent in the three subsectors was technically and economically feasible and would allow China to achieve its required HCFCs reductions. CHEAA proposed the draft ban to FECO.

ii. Putting the subsector ban into place

64. Once the assessment and proposed ban were finalized, FECO provided them to MEE for approval. MEE paid high attention to the report and industry data, organized work meetings with sector experts and enterprise representatives, and forwarded the draft ban to all the relevant ministries, provincial EEBs, and industrial associations to solicit feedback. Hence the ban gained ownership by regulators at all levels and by the time it came into force in early 2019, local authorities could be ready to begin monitoring and enforcement of all enterprises in the subsectors, including those that did not receive MLF support.

iii. Building capacity for provincial and local monitoring

65. Despite the progress and eventuality of national-level policies on quotas and registration as well as to ban HCFC-141b in the subsectors, it came to MEE and FECO's attention that some technical and capacity challenges remained on the ground, for example on the speed of creating registries per the 2013 rules, how

to differentiate alternatives from HCFCs, how to collect samples, and how and where blowing agent could be tested.

66. Therefore, in order to ensure sustainable phase-out of HCFC-141b and support building monitoring capacities at the local level, technical assistance and monitoring support were provided in 2018 to the Zhejiang, Guangdong, Qingdao, Shanghai, Liaoning and Jiangsu Provinces, where PU foam enterprises are highly concentrated. According to the TOR and work plan provided to contracted parties (at times research or monitoring institutions or other bodies within local ODS coordination groups), of the development of registries or lists of PU foam enterprises and system house companies in respective regions were accelerated or initiated as was necessary and supplemented. During the monitoring, relevant inspection teams have been required to conduct on-site visits to up to 30 PU foam enterprises and system houses per quarter depending on the regional enterprise population and budget. Samples of foam products and/or polyols must be collected during the visits. FECO provided 11 pieces of instant blowing agent detecting equipment to the teams to screen for the types of blowing agents. If ODS that was already phased-out is detected during the screening, the inspectors send the samples to certified institutions for lab testing and for a certified report. If the certified report indicates illegal ODS use by the enterprise, the evidence is provided to provincial EEBs and reported to FECO for legal and punitive actions.

67. The actions taken per the contracted TA will become absorbed and institutionalized by the provinces that have received the support for long-term monitoring, verification and enforcement. Several of the provincial EEBs have confirmed that a budget will be provided once the TA support is exhausted.

iv. Other TA activities to promote sustainable conversion

68. To promote the use of HCFC-141b alternatives in the larger PU foam industry, FECO has developed a number of TA, such as alternative studies in the panel and spray foam subsectors, and research on catalyst and stabilizers that are compatible with alternatives that may provide more solutions to different subsectors and different size companies. A safety standard on using HC technology in PU foam enterprises was developed and submitted to the relevant committee for review. The safety standard will guide enterprise management on using HC or HC pre-blended polyols as blowing agent in the sector and avert any inclination to resume use of non-flammable ODS.

69. Because SMEs in the PU foam sector lack information on alternatives and management capacity, they face more difficulties and challenges in selecting and using appropriate HCFCs-alternative technologies. A qualified institution was selected during Stage I to provide SMEs with technical training, consulting and onsite guidance. During the course of training and technical consultations, feedback and suggestions from enterprises and trainees was collected which will help FECO to plan and design phase-out activities in subsequent work plans. FECO also held workshops on ODS management policy, HPMP implementation, and development of alternative technologies each year during Stage I.

F. Special ODS Law Enforcement Action

70. As of August 2018, on the basis of previous supervision and law enforcement, MEE has mobilized environmental authorities at provincial and municipal levels across the country to launch the latest ODS law enforcement action. MEE has emphasized its "zero tolerance" position towards illegal ODS related activities on various occasions. This enforcement action targeted, alleged sources of ODS by extensively collecting information and tracking down illegal production. In the process, it found and demolished two illegal CFC-11 production factories in Liaoning Province and Henan Province. On the spot, 177.6 tonnes of raw materials and 29.9 tonnes of illegally produced CFC-11 respectively were seized. The raw materials and CFCs were properly sealed, awaiting an accredited entity for disposal. Suspects were transferred to China's judicial organ for criminal prosecution. The action, also simultaneously targeted illegal ODS use

and as a result 1,172 related companies were investigated in China. Out of these investigations some CFC-11 traces in some batches of materials from 10 system houses, were detected. Local environmental authorities filed charges and exercised punishment to those involved in illegal use according to laws.

71. The enforcement action has demonstrated that with the revamping of control measures such as the 2013 rules requiring quota and registration for producers and users of HCFCs plus the 2015 amendments to the framework laws on environmental protection and air pollution control, there remain some incidences of illegal activity. Lessons drawn from and gaps identified during Stage I implementation and transfer of responsibility to local EEBs can more specifically assist FECO to maximize its influence through the MLF funded foam sector plans on the monitoring, verification and enforcement system, within its mandate. These are compiled in the following chapter.

IV. Lessons Learnt

A. Proven / best practices in monitoring and verification of consumption and phase-out

i. Third-party consumption verification

72. As indicated above, independent financial and technical consultants have been primarily responsible for the verifications during HPMP Stage I implementation. Introducing third-party verification, which is ensured by an open-competitive selection process, guarantees the independence of verification results. Moreover, because the third-party consultants were selected among other competitors, they were regarded as the most qualified to conduct the verification. Actual result from Stage I, namely the fact that all subprojects and grants delivered sustained HCFCs phase-out results, all in line with baseline information as well as with ExCom and PIM guidelines, confirms that the verifications were conducted with efficiency and integrity.

ii. Role of the mass-balance approach at enterprise and national levels

73. The mass-balance approach was adopted on two levels during Stage I HPMP implementation. Firstly, at the beneficiary enterprise level, the consultant used this approach to validate the baseline HCFC-141b consumption by comparing the ratio between MDI and HCFC-141b-based polyols. The data on foam production and HCFC-141b content per unit of product was also calculated for additional cross-checking. The performance verification after completion of conversion followed similar calculation procedures by comparing MDI, pre-blended polyols, and foam production data. This approach provides a reasonable way to determine the baseline, and would detect whether the beneficiary enterprise was using other blowing agents due to the different ratio of blowing agent contained in the polyol.

74. Secondly, the mass-balance approach also is useful to capture national level HCFC-141b that is consumed in PU rigid foam manufacturing. Unlike polyols that are produced and sold by hundreds of system house companies, MDI companies are limited in number allowing MDI used in PU rigid foam to be easily counted. The fixed ratio between MDI and polyols is known, as is the fixed percentage of HCFC-141b in polyols for different applications. Thus FECO, with assistance from sector experts, was able to derive HCFC-141b consumption as a cross-check with known annual HCFC-141b production figures. Any large deviation between the two figures would serve as an additional warning sign to any other type of monitoring activity that other foam blowing agents may be in use.

B. Identified gaps and possible means to bolster enforcement capacity

75. Experience in implementing the PU foam sector plan under the Stage I HPMP that is coming to a close in June 2019 not only has helped to reinforce what works well in terms of ensuring sustainable phase-out, but also reveals some areas that could benefit from further attention.

76. *Testing Capacity to Facilitate Enforcement*. It was confirmed during regular EEB monitoring and during the 2018 enforcement action that there are currently only up to three institutions that can provide certified testing reports which are essential for enforcement and litigation against companies that violate China's ODS regulations. With development of a technical standard on testing blowing agent in foam with FECO's support in 2017, six more testing centers in key provinces are expected be able to adopt the standard and become certified PU foam blowing agent testing labs by the end of 2019.

77. *Tools and Equipment for Expanding Monitoring and Sampling Capacity*. During regular monitoring activities, foam and polyol samples are collected by local inspectors. It would be costly and time-consuming if all the samples were sent to testing centers. A blowing agent detector has become recently available in the market that has the proven ability to provide instant reports on the nature of the blowing agent in a sample of foam or polyols. In fact, the limited pieces that have been provided by FECO to eleven provinces and cities have significantly bolstered onsite monitoring capacity. Each provincial EEB and local EEB with a high concentration of PU foam enterprises should have at least 3-5 pieces of equipment to improve efficiency.

78. *Bolstering Enterprise Registries to include Former ODS-Users.* The local EEBs obtain lists of HCFC-141b consuming enterprises primarily based on the quota and registry information from MEE and provincial EEBs. However, the lists may not include the enterprises that have converted to non-HCFCs technologies or are under conversion. FECO has now provided the list of beneficiary enterprises that were converted under both the CFCs phase-out plan and HPMP Stage I in the PU foam sector to provincial EEBs, and recommends that the municipal level to more consistently improve PU foam enterprise data via EIA records and other channels to broaden the scope of monitoring for sustainable phase-out. Moreover, more follow-up from authorities at the provincial and national levels to ensure local EEBs make use of the lists, i.e. incorporate them into functioning registries may be needed.

79. *Fostering cross-regional cooperation and knowledge exchange.* Although training and work meetings are regularly organized within each province, experience and practice exchanges across regions/provinces have been insufficient. It is recommended that cross-regional workshops on monitoring experience in the PU foam sector and other sectors be held at least once a year. Officers from leading departments and enforcement teams from different provinces, sector experts, and officers from MEE and FECO shall be invited to discuss achievements and outcomes through enforcement action as well as monitoring obstacles.

V. Proposed Methodology for Verifying Use of Phased-out Substances

80. The methodology currently in place under the Stage I HPMP for verifying the type and amount of HCFCs consumed at beneficiary enterprises and for monitoring their HCFCs phase-out up to hand-over to the local authorities has evolved over the years to a point where it is virtually impossible for parallel use of already phased out substances. Moreover, with the multiple project monitoring, verification and reporting measures, the continued technical support to enterprises during conversion, and the research and knowledge exchange on applying well-established alternatives (hydrocarbon and CO_2/water), the conversions are likely to be sustainable. Nonetheless, by assessing the approach described in the previous chapters,

observing on the ground results from the recent TA to the provinces and considering some of gaps previously laid out, the areas that could merit from more attention are those after hand-over by FECO. Although not directly the purview of the HPMP, an expanded methodology is proposed below to verify that ODS already phased-out have, are and will not be consumed at enterprises covered by the project. Most notably is to employ a wider, more systematic use of sampling in compliance monitoring. Several additional measures under the Stage II HPMP are also introduced to support the verification methodology post-project.

i. Subproject commissioning and handover

81. The Stage II HPMP will follow the same monitoring, verification and reporting mechanism as in Stage I, given that the activities are more or less the same. A new simplified implementation modality will be adopted for a subset of conversion at SMEs but onsite verification of consumption and monitoring of implementation will still continue at beneficiary SMEs. Meanwhile, additional measures and emphasis beyond the core activity of project implementation will be made primarily through technical assistance and proposed in the last section below as complementary to the proposed, expanded methodology.

82. As the national entity responsible for the overall coordination and implementation of the sector plans and implementation of conversion subprojects at foam enterprises, FECO should ensure that information exchange with local EEBs is maintained and even further strengthened, while verifying the sustainability of conversions where it still has authority. FECO will introduce the following measures:

- Once a conversion subproject is completed, relevant information on the beneficiary enterprise will be shared with the local EEB concerned for inclusion or update in the EEB's registry of enterprises.
- Data will be provided including but not limited to: enterprise contact information, completion date, substances phased out, type of products manufactured, and the alternative technology adopted.
- While the overall HPMP is still ongoing, FECO and/or the World Bank as the IA, will undertake random visits to **at least 10% of enterprises a year** that have converted one year prior or more.

ii. Integrated registry of past and present HCFCs-consuming enterprises

83. All compliance monitoring and enforcement activities require accurate, ongoing identification of the regulated users of HCFCs. The regulatory basis is there with registries required from MEE for producers, larger users and distributors and local EEBs for smaller companies.

84. The current registration systems in place with most local EEBs primarily contain information on enterprises that use and/or sell HCFCs. However, in order to have a means to ensure that there has been longer term, sustainable HCFCs phase-out, local EEBs will be encouraged to upgrade their existing registration systems, to also include previous users of HCFC-141b, i.e. to develop registries of foam manufacturers. The main sources of information will include:

- the list of enterprises with HCFCs consumption quotas and the list of registered HCFCs distributors provided by MEE;
- regular information on beneficiary enterprises provided by FECO;
- historical sectoral information provided by industrial associations;
- downstream client information shared by system houses in the region;
- business registration information shared by local administration for industry and commerce; and,
- internet searches, newspapers, advertising, "drive-by" surveys and other types of reconnaissance.

85. In addition, local EEBs will be required to assign personnel for data management and system maintenance, to cross check all relevant information in a timely manner, and to update the list of enterprises consumption/ ODS sales status. The inventory should facilitate tracking of changes in enterprise history

for instance graduation to a large user (above 100 MT) or vice versa, number of monitoring visits, dates and findings, and any non-compliance.

iii. Policy and planning for HCFCs compliance monitoring

86. Monitoring, inspection and enforcement is the joint effort of different departments under MEE, which is represented at the provincial and local levels with air and environment divisions or other division leading, given their ODS mandate. Local EEBs must develop and implement an approved compliance monitoring work plan that reflects state or provincial priorities as well as meets the requirements of air pollution and environmental rules (which would include ODS regulations); is effective in determining compliance with rules, standards and bans; and, provides representative monitoring data required by the provincial EEB and/or MEE. The work plan incorporates monitoring and enforcement at multiple levels and is developed based on the number and geographical distribution of enterprises in a region. More recently, with the special ODS investigation and the "look back" programs for environmental compliance, there have been special inspections and sampling.

87. Under this proposed expanded verification methodology, the work plans should now consistently include:

- enterprises in the foam sector that may have already stopped the use and/or sales of ODS blowing agents as well as those that still use and sell HCFC-141b products;
- a minimum threshold (frequency) of these enterprises to be visited in the reporting period; and,
- the type of monitoring (routine or on-demand, and consequently the required composition of the monitoring team and reporting requirements).

iv. Monitoring and enforcement

88. Compliance monitoring and enforcement work is conducted by the local EEBs. There will be a lead division/branch that has the ODS mandate in local EEBs. Monitoring consultants and officials from monitoring branches may participate in sampling and testing but only authorized/licensed enforcement officials are allowed to conduct inspections at an enterprise. There are also inspectors at multiple levels; the higher levels of MEE and provincial EEBs can also conduct spot checks, normally on the basis of "on demand" or special campaigns such as the ODS investigations of August 2018. To complete the loop of inspections and facilitate enforcement action, qualified institutions must be used for testing any samples collected.

89. *Regular and on-demand inspections*. In terms of the methodology, inspections of foam manufacturers and system houses will be similar to the technical and financial verifications done during subproject preparation and implementation involving physical inspection of manufacturing facilities, operation and storage areas; document review and interviews with key personnel. In accordance with current work rules for monitoring and enforcement, at least two licensed enforcement officers are required for each on-site inspection. They will check both the production logs as well as financial records for corroborating data. Business licenses and other documents to prove the enterprise legality will also be checked.

90. For better mainstreaming of ODS monitoring and for resource efficiency, this proposed methodology envisions:

- annual inspections on all PU foam enterprises and system houses in a given EEB jurisdiction.
- physical inspection, document review and interviews in all inspections.

91. It is important to note, that monitoring arrangements under the proposed methodology would entail additional costs, particularly for targeted inspections of foam blowing agent only. The indicative budget for regular inspections is estimated below.

Table III. Estimated cost of one on-site visit to an enterprise (US$)

Item	Cost standards	Budget (US$)
Transportation	100 US$/person, 2 persons	200
Accommodation	150 US$/person, 2 persons	300
Sub-total	--	**500**

92. *Sampling at enterprises to determine compliance*. In both regular and on-demand inspections, sampling will be conducted using standard criteria that is adapted for specific regions to select which enterprises where sampling is required and frequency. Each EEB shall specify the sample collecting plan in the annual investigation plan. Inspectors will collect random samples from PU foam products, production lines or pre-blended polyol using standard procedures that are clear to the enterprise and that will permit high quality testing results. Each sample is required in triplicate for testing, with an estimated cost of US$450 per triplicate samples. The collected samples will undergo preliminarily testing onsite with specially designed instant foam blowing agent detectors. When samples result in positive results for banned and phased out ODS, they will be sent to qualified labs for further testing and certification.

93. The ability for inspectors to determine historical use of already phased out ODS is limited to the business practices at enterprises. Most foam companies produce on demand and will not carry stock of more than a year. In the rare cases that companies do have products or product samples reaching back several years, inspectors will be encouraged to take samples as their mandates permit and according to a sampling protocol or methodology.

94. *Third-part testing and enforcement*. In order to prosecute breaches of policy and regulations and impose punitive action, certified ODS samples taken on-site are required. Currently only up to three laboratories in China are qualified to do so. The estimated cost is US$120 per sample but what is more prohibitive is the time required until local EEBs receive results especially where they are located outside the province with the testing capacity. The effectiveness of monitoring action and consequently the sustainability of the phase-out is largely dependent on the potential punishment that an illegal producer or user will receive if caught. Having certified results defendable in court is therefore critical. The proposed action is to expand the number of qualified testing labs in China. MEE is establishing 6 testing centers including a national laboratory for ODS testing by the end of 2019 to enhance ODS testing capacity and provide legal support for enforcement actions.

95. In addition, to intensify punishment on illegal ODS production, MEE will strengthen cooperation with jurisdictional authorities to enable severe illegal ODS behaviors to be subject to punishment under Criminal Law. Punishment of various ODS illegal behaviors will be further intensified and deterrence force will be further enhanced.

v. Cross-regional cooperation and validation

96. *Joint Inspections.* The entire chain of PU foam production is complicated involving chemical suppliers, system houses, suppliers/distributors of raw materials and PU foam manufacturers. Knowledge is needed on the inputs to banned or regulated ODS as they may manifest themselves in various ways.

Furthermore, the geographical distribution of PU foam manufacturers and system houses is wide-spread across China. Nonetheless, during monitoring and enforcement, it is possible that local environmental enforcement authorities will trace back the source of raw materials for PU foam production to other administrative regions. In such cases, cross-regional collaboration for checking suspected players in the supply chain is needed. Local EEBs would report such a situation to MEE, and MEE will in turn coordinate across involved provinces to trigger a cross-regional verification and as required, enforcement action.

97. In addition, due to the more impactful means of enforcement with the Department of Public Security, and thereby leverage to ensure more effective and efficient law enforcement, local environmental enforcement authorities will more actively seek the cooperation of, and at times joint action with the local DPS to investigate the cases.

98. *Cross-regional inspections*. Some EEBs have pioneered a verification system whereby inspection teams from one municipality or county will be assigned random inspections in another jurisdiction to cross-check inspections from regular inspectors. This provides a type of "third-party" check and is important where regular inspections to enterprises may become routine and make it difficult to detect any or all deviations from regulations on the books.

vi. Enabling longer-term monitoring and verification

99. Considering the turnover and reposting of officials and enforcement staff, as well as local changes in the foam market from time to time, regular training on ODS compliance monitoring, verification and enforcement is required on a yearly basis. The proposal is to have at least one training workshop organized at the provincial level every year for each EEB, with the participation of local officials and enforcement staff from provincial, city and county levels.

Table IV. Estimated cost of one training workshop for local officials & enforcement staff per province (US$)

Item	Cost standards	Budget (US$)
Consultant services	180 US$/person, 6 persons	1,080
Meeting organization	The rate of the meeting room, meeting equipment, etc.	1,300
Document preparation	5 US$/person, 150 persons	750
Accommodation	80 US$/person, 150 persons	12,000
Total	--	**15,130**

100. The review of the system to monitor consumption of foam blowing agents under the Stage I HPMP as well as the past and more recent lessons learned in ensuring sustainable phase-out reveal a number of technical assistance activities that could be included in the Stage II PU foam sector plan. These activities would make it even more likely that conversions from Stage I were sustainable and build a more robust system outside of the project to help keep previously phased out ODS blowing agents from resurfacing over time. These include:

- Expand TA activities for strengthening registries and monitoring capacity at the local level to other key provinces, targeting first those implicated with some illegal ODS production and uses and/or having known foam manufacturing.
- Develop tools to facilitate monitoring, inspection, sampling and enforcement of ODS users and distributors, including:
    - **Inspection manual or module** (for integration in existing inspection manuals/procedures) specific to system houses and foam manufacturing;
    - **Foam product and polyol sampling protocol or methodology** for distribution/sharing among provinces;

    - **Develop a model online registration and tracking system** for HCFCs users, including those that have phased it out for adaptation/adoption by provincial and local EEBs;
- Continue to conduct technical research and demonstration of HCFCs alternative foam blowing agents.
- Conduct **annual mass balance analysis** soliciting MDI sales information and alternative consumption in the sector to cross-check with the national HCFC-141b production, determine market size, and verify whether additional foam blowing agent may be in the market.
- Support annual training workshops in provinces on the national level to level the knowledge and capacity for effective monitoring.
- Support MEE to facilitate cross-regional enforcement action, where it is not always clear in the supply chain who is responsible for illegal activity.

Annex 1 –Agreement between the Executive Committee and China for the Reduction in Consumption of HCFCs: Key Decisions and Provisions related to the PU Foam Sector Plan

Executive Committee Decision 64/49 - Stage I of the HCFCs phase-out management plan for China

(a) To acknowledge with deep appreciation the commendable efforts made by China towards the implementation of HCFCs phase-out activities in the polyurethane foam (PU), the extruded polystyrene foam (XPS), the industrial and commercial refrigeration (ICR), the refrigeration and air conditioning (RAC) and the servicing sectors to enable it to meet the 2013 and 2015 phase-out targets stipulated in the Montreal Protocol;

(b) To approve, in principle, stage I of the HCFCs phase-out management plan (HPMP) for China for the period 2011 to 2015 to reduce HCFCs consumption by 10 per cent of the baseline, at the amount of US$265,000,000 plus agency support costs for the Government of Germany, the Government of Japan, UNDP, UNEP, UNIDO and the World Bank, on the understanding that a maximum level of funding of up to US $5,000,000, plus agency support costs for UNDP, for the solvent sector could be considered at the 65th meeting;

(c) To note that the Government of China had agreed to establish as its starting point for sustained aggregate reduction an estimated baseline of 19,408.8 ODP tonnes, calculated using actual consumption of 18,602.7 ODP tonnes reported for 2009 under Article 7 of the Montreal Protocol, and estimated consumption of 20,215.0 ODP tonnes for 2010.

Executive Committee Decision 67/20 – HCFCs Consumption Reduction Agreement

(a) To approve the updated Agreement between the Government of China and the Executive Committee for the reduction in consumption of HCFCs submitted by UNDP, on behalf of the Government of China; and

(b) To note that the Fund Secretariat had updated paragraphs 1, 6 and 9 and Appendices 1-A, 2-A, 6-C and 6-D of the Agreement between the Government of China and the Executive Committee to reflect the newly established HCFCs baseline for compliance, the change in responsibility of co-operating agencies, and the now established agency support costs, and that a new paragraph 15 had been added to indicate that the updated Agreement superseded that reached at the 65th meeting and its revised Appendix 5-A approved at the 66th meeting, as shown in Annex X to the present report.