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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
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REPORT ON IMPLEMENTATION OF APPROVED PROJECTS WITH SPECIFIC REPORTING REQUIREMENTS

Introduction

1. The Government of Germany, UNDP, UNEP and World Bank have submitted progress reports on the implementation of the following projects, where specific reporting requirements are contained in the agreements, for consideration by the Executive Committee at its 60th Meeting:

(a) Afghanistan: National phase-out plan (2009 progress report, 2008 consumption verification and 2010 annual programme) (Germany and UNEP);

(b) Brazil: National CFC phase-out plan: implementation plan for the eighth tranche (UNDP)

(c) Cambodia: Terminal phase-out management plan (UNEP/UNDP)

(d) China: CFC production phase-out programme: verification of the 2009 annual work programme (World Bank)

(e) China: Phase-out of the production and consumption of CTC for process agent and other non-identified uses (phase I): 2009 verification (World Bank)

(f) China: Strategy for gradual phase-out of 1,1,1-tricholoroethane (TCA) production (second stage programme) (World Bank)

(g) Fiji: Terminal phase-out management plan (2009 progress report) (UNDP and UNEP);

(h) Georgia: Terminal CFC phase-out management plan: verification audit report (UNDP).

(i) Iran (Islamic Republic of): National CFC phase-out plan: 2010 annual implementation programme and 2008 audit report (Germany)

(j) Maldives: Terminal phase-out management plan (UNEP/UNDP)

(k) Philippines (the): National phase-out plan (World Bank)

(l) Samoa: Terminal phase-out management plan (UNEP/UNDP)

(m) Venezuela (Bolivarian Republic of): CFC production phase-out programme (World Bank)

2. The Secretariat reviewed the progress reports in light of the original project proposals, ODS data reported by the Governments concerned under Article 7 of the Montreal Protocol, and relevant decisions taken by the Executive Committee and the Meeting of the Parties.

Structure of the document

3. The Secretariat has grouped the progress reports into two sections:

Section I: Progress reports on the implementation of national ODS phase-out plans (NPPs)/ terminal phase-out management plans (TPMPs) in Afghanistan, Brazil, Cambodia, Fiji, Georgia, Iran (Islamic Republic of), Maldives, Philippines (the) and Samoa.

Section II: Progress reports on the implementation of projects in the production sector in China (CFC, CTC and TCA) and Venezuela (Bolivarian Republic of) (CFC).

I. REPORTS ON IMPLEMENTATION OF NPPs/TPMPs

Afghanistan: National phase-out plan (Germany and UNEP)

4. The NPP was approved by the Executive Committee at its 47th Meeting. Under the NPP, the Government of Afghanistan committed to phasing out all CFCs by 1 January 2010 and CTC by 1 January 2007. The Executive Committee approved in principle US $1,065,806 plus agency support costs of US $98,905 for the Government of Germany and US $39,650 for UNEP, for the implementation of the NPP. The Executive Committee has already approved the funding for the two tranches included in the NPP, at its 47th and 48th Meetings.

Progress report

5. A number of results have been achieved so far during the implementation of the Afghanistan NPP, including: instructions issued by relevant authorities for a complete ban on imports of all ODS, except for HCFCs, with effect from January 2010; training of an additional 111 customs officers and 81 refrigeration service technicians in good practices. Also, 113 additional recovery and recycling machines were distributed among service workshops. The complete phase-out of all ODS used by the industry, excluding HCFCs, has been achieved. Many information and awareness activities were also implemented. Under the HCFC management plan being prepared, some HCFC-based industry manufacturing enterprises have been identified and a phase-out plan is being prepared.

6. In 2009, an audit of the 2008 consumption verification report was undertaken by an independent auditor, who concluded that total CFC consumption was 40.0 ODP tonnes in 2008. The report also indicated that there were no imports of any other ODS except HCFCs, as evidenced by the Customs Department records. It further stated that "adequate systems are in place to ensure implementation of the ODS rules and regulations." The report also pointed out that the licensing system for HCFCs is not yet in place and immediate action is required to regulate and record imports.

7. By the end of 2009, US $1,044,806 had been disbursed, and the balance of US $21,000 is to be disbursed in 2010.

2010 work programme

8. The planned activities for 2010 include enforcement of the ODS regulations; continued training for refrigeration service technicians and customs officers; continued operation of the recovery and recycling equipment, with continued training of technicians in this area; continued awareness-raising activities; and management and monitoring activities.

Secretariat's comments

9. The Secretariat noted the comprehensive progress report on the implementation of the Afghanistan NPP, together with the supporting documents, including the verification report on national ODS consumption in Afghanistan. The 2008 CFC consumption of 40.0 ODP tonnes reported by the Government of Afghanistan under Article 7 of the Montreal Protocol was already 17.0 ODP tonnes below that of 57.0 ODP tonnes allowed for that year. Although CFC consumption data is being gathered, UNEP indicated that the Ozone Officer confirmed that Afghanistan will be in compliance with the level of consumption stipulated in its agreement with the Executive Committee. Furthermore, during the preparation of the progress report and work plan, the issue of how to sustain compliance was discussed. It is noted that the Government is confident that it will be able to sustain compliance through the NPP activities.

10. Regarding the recovery and recycling scheme in operation, UNEP reported that some delays with distribution of the equipment were experienced due to security concerns in the country. For the same reason, the Ozone Officer was unable to conduct a detailed survey and assess the amounts of CFCs recovered in 2009. Based on a random survey conducted by the Ozone Officer, reuse of refrigerant has meant substantial savings for workshop owners.

11. One of the conclusions of the verification report indicated that HCFCs are not included in the licensing system. UNEP advised that the National Environment Protection Agency is working with the Ministry of Trade and Commerce for the implementation of ODS regulations and has requested registration and issue licenses for HCFC imports to be conducted.

12. Noting that funding for the preparation of the HPMP was approved by the Executive Committee at its 55th Meeting, the Secretariat suggested that, during the implementation of the final tranche of the NPP, the Government of Germany and UNEP consider advising the Government of Afghanistan to undertake actions to facilitate the phase-out of HCFCs in due time. UNEP indicated that HPMP preparation is under way, and the country is getting ready to undertake actions to control and phase out HCFCs.

Secretariat's recommendation

13. The Executive Committee may wish to:

(a) Take note of the progress report on the implementation of the 2009 work programme of the national CFC phase-out plan (NPP) for Afghanistan;

(b) Take note of the verification report of 2008 CFC consumption;

(c) Approve the annual implementation programme for 2010; and

(d) Request the Government of Afghanistan, with the assistance of the Government of Germany and UNEP, to submit a progress report on the implementation of the 2010 work programme of the NPP no later than the 63rd Meeting of the Executive Committee.

Brazil: National CFC phase-out plan: implementation plan for the eighth tranche (UNDP)

14. The NPP to completely phase out the CFC consumption in the country by 1 January 2010 for Brazil was approved by the Executive Committee at its 37th Meeting, at a level of funding approved in principle of US $26,700,000 for its implementation. The eighth and final tranche was approved by the Executive Committee at its 59th Meeting, with decision 59/40 requesting UNDP "not to commence disbursement of the funding approved for the eighth tranche or any funding remaining after implementation of approved activities until the Committee had approved, at a future Meeting, an implementation plan covering activities related to the remaining funds".

Progress report

15. A number of activities were implemented in 2009 as reported by UNDP, including continued training of technicians, bringing the total number of technicians trained under the plan to 25,317 and essentially reaching the total target of 26,000. Three thousand recovery tool kits for technicians were purchased, of which 300 were already provided to workshops while the distribution of the remaining sets is foreseen in 2010. Seminars on alternative fluids in refrigeration were conducted and five recovery and recycling (R&R) regional workshops were organized. One hundred fourteen recycling units were purchased as part of a CFC–12 recycling project, and the distribution of 360 MAC R&R machines to the established reclamation centres was finalized; and a study in commercial refrigeration to collect data on

small and medium equipment using CFCs was conducted. The work on the metered dose inhaler (MDI) transition strategy was concluded and a related workshop for doctors has been organized. All activities in the foam, solvent and commercial refrigeration manufacturing sectors were completed prior to 2008. A number of measures were undertaken to combat illegal ODS trade, including awareness raising activities and improvements in the ODS registry tool: these activities complemented the customs training, which was completed prior to the current reporting period. Finally, a number of monitoring activities were also implemented.

16. The verification for the 2008 consumption had already been submitted to the 59th Meeting of the Executive Committee. It indicated a CFC consumption of 290.4 ODP tonnes in 2008, which is consistent with the Article 7 data reported by the Government of Brazil and well below the maximum allowable consumption under the Agreement of 424.0 ODP tonnes.

17. The unspent balance of the approved funding as of December 2009 was US $5,496,121, which is equivalent to 20.6 per cent of the funding approved. UNDP advised that of that amount, a further US $1,908,259 have already been committed bringing the uncommitted funding to 13.4 per cent of the approved amount.

2010/2011 Implementation programme

18. UNDP has provided an implementation plan for the years 2010 and 2011, detailing the planned activities to be carried out with the remaining funding. The purchase of an additional 1,000 recovery tool kits for technicians is planned as well as finalizing the technicians training, and organizing the final two seminars on alternative fluids in refrigeration. The reclamation centres will be strengthened by establishing regional storage facilities. The 114 recycling units will be delivered, and a further 120 kits for testing of contaminated and/or recycled fluids will be purchased. Brazil also intends to replace or retrofit CFC using equipment as part of a commercial refrigeration environmental management activity, and to publish a related brochure. While the chiller recovery and recycling activity was completed prior to 2009, a new chillers conversion activity is focusing on the public sector in 2010, designed to complement a similar GEF activity for the private sector. Finally, project monitoring will continue to be undertaken. The implementation programme for 2010 and 2011 foresees spending all of the remaining funding within the NPP.

Secretariat's recommendation

19. The Secretariat recommends that the Executive Committee:

(a) Notes the 2008 verification report and the 2009 annual implementation report of the national CFC phase-out plan (NPP) in Brazil;

(b) Approves the annual implementation plans for the years 2010 and 2011; and

(c) Requests the Government of Brazil, with the assistance of UNDP, as lead agency, to submit annual implementation reports regarding the previous year to the first meeting of the Executive Committee every year until the NPP is completed.

Cambodia: Terminal Phase-out management plan (UNEP/UNDP)

20. The TPMP for Cambodia was approved in principle at the 53rd Meeting of the Executive Committee at a total cost of US $450,000 plus support costs for the joint implementation by UNEP and UNDP. The first tranche of US $315,000 plus agency support costs was also approved at the same meeting. At the 57th Meeting, the second and final tranche of Cambodia's TPMP was approved at the funding level of US $135,000 plus agency support costs. The approval of the final tranche of the TPMP

was made on the condition that the country must submit annual reports on the implementation of the activities undertaken in the previous year. This report covers activities implemented under the second tranche.

Progress report

21. In 2009, a total of 141 technicians were trained in good practices in refrigeration bringing the overall number of trained refrigeration technicians in Cambodia to almost around 400 since the inception of the train-the trainers' course in refrigeration in the first tranche. During the same period, 120 customs officers were trained. There are currently 357 trained customs officers in the country as a result of these training workshops.

22. The equipment component of the TPMP is now fully operational, as well as the retrofit incentive programme. Until December 2009, 3,176 cars have been retrofitted from CFC-12 to HFC-134a, and about 5,735 ODP tonnes of CFC-12 have been recovered, recycled and reused since August 2008. Cambodia has also been strictly enforcing the implementation of the sub-decree on ODS management which has been in place since 2005, therefore, the licensing system for ODS import export is working very smoothly.

Secretariat's comments

23. Cambodia has made some major reductions in its CFC consumption, with its 2008 Article 7 data indicating consumption of only 1.4 ODP tonnes from a baseline of 94.2 ODP tonnes. Cambodia will continue to sustain the implementation of the activities under the TPMP in particular, enforcing the licensing system to ensure zero CFC imports from January 2010. UNEP has indicated that the Government is committed to doing so.

Secretariat's recommendation

24. The Executive Committee may wish to take note of the progress report on the implementation of the terminal phase-out management plan for Cambodia.

Fiji: Terminal phase-out management plan (UNEP and UNDP)

25. The TPMP for Fiji was approved at the 47th Meeting of the Executive Committee at a total cost of US $120,000 plus agency support costs of US $10,400 for UNEP and US $3,600 for UNDP. The TPMP for Fiji was approved on a one-time funding basis, with the condition that the country must submit annual reports on the implementation of the activities undertaken in the previous year.

Progress report

26. Training for customs officers continued with the completion of seven workshops, resulting in 19 officers receiving refresher courses to facilitate the implementation of the ODS regulations. Through the good refrigeration practices programme, training workshops were conducted for an additional 88 refrigeration service technicians. Several awareness-raising activities on ozone-related issues were also implemented.

Secretariat's comments

27. Fiji has consistently reported zero CFC consumption since 2000. Its 2008 CFC consumption under Article 7 of the Montreal Protocol remains zero. Fiji has been implementing the activities under the TPMP to ensure that this zero CFC consumption is sustained beyond 2010. Responding to a question about whether the Government of Fiji has implemented any activities to facilitate the phase-out of

HCFCs, UNEP indicated that under the ODS Act and Regulations, importers of HCFCs are required to register and apply for import licenses from the Ozone Unit. The servicing workshops and technicians are also required to have licenses to handle and use ODS, including HCFCs.

28. The progress report indicated that two workshops for customs officers could not be conducted due to the lack of participants from the Fiji Revenue and Customs Authority. Although this issue has been addressed by relevant stakeholders, it could have an impact on the implementation of the HPMP. On this issue, UNEP reported that Fiji is in the process of preparing its HPMP. With regards to compliance with the HCFC phase-out targets, one of the focus areas is to ensure that the licensing system is effective in controlling the import/export of HCFCs according to quotas and relevant phase-out targets.

Secretariat's recommendation

29. The Executive Committee may wish to take note of the 2009 progress report on the implementation of the terminal phase-out management plan for Fiji.

Georgia: Terminal CFC phase-out management plan (verification report UNDP)

Background

30. On behalf of the Government of Georgia, UNDP, as the lead agency, has submitted a verification report on the CFC consumption in Georgia in 2007. Decision 45/54 (d) required, on an annual basis, verification of a randomly selected sample of approved TPMPs under implementation. Georgia was selected for such verification at the 57th Meeting, and the amount of US $20,000 was added to UNDP's work programme in that year. The TPMP for Georgia was approved by the Executive Committee at its 50th Meeting, to completely phase out CFC consumption by 1 January 2010. Total funding of US $325,000 plus agency support costs of US $24,376 for UNDP was approved in principle by the Executive Committee, and released in two tranches at the 50th and 53rd meetings of the Executive Committee.

Verification report

31. The verification included reviews of: the current ODS policies and legislation system; Government statistics on ODS imports and exports; 2006 to 2008 CFC consumption by larger end-users of refrigerants; and verification of CFC consumption. It concluded that in 2008 there was no consumption of CFCs in the country. No discrepancies were found between the data provided by the Ozone Unit, the Customs Authority, the Department of Statistics and other stakeholders.

Secretariat's comments

32. The Government of Georgia has reported zero consumption of CFCs under Article 7 of the Montreal Protocol for 2008. Based on the opinion of local experts, CFC imports were also zero in 2009.

33. The Secretariat and UNDP discussed some of the suggestions provided by the auditor for banning imports of Annex A and B substances from 1 January 2010, banning imports of ODS-based equipment, and implementing a permanent training programme for customs officers. UNDP indicated that imports of Annex A and B substances have already been banned from 1 January 2010. Furthermore, the Government is considering the introduction of import quotas for HCFCs according to the Protocol phase-out schedule, but quotas for HCFC-based equipment will be considered separately. The Ministry of Environmental Protection and Natural Resources, together with the Ministry of Finance and UNDP, had established a training programme for customs officers within the framework of the TPMP.

Secretariat's Recommendation

34. The Executive Committee may wish to note the successful verification of Georgia's compliance with its phase-out obligations for CFC consumption under the terminal phase-out management plan in 2008.

Iran (Islamic Republic of): National CFC phase-out plan: 2010 annual implementation programme and 2008 audit report (Germany)

35. The NPP for the Islamic Republic of Iran was approved by the Executive Committee at its 41st Meeting to completely phase out CFC consumption in the country by 1 January 2010. The Executive Committee approved in principle US $11,250,000 for the implementation of the NPP. At the 52nd Meeting, decision 52/33 led to the deduction of an MDI component from the plan's overall funding, with a total of US $11,017,250 being approved under a revised agreement at the 53rd Meeting. The seventh and final tranche of that funding was approved by the Executive Committee at its 57th Meeting, requesting the Government of Germany to provide an annual implementation programme for 2010 not later than to the 60th Meeting.

Verification and progress report

36. The Government of Germany has submitted a verification report for 2008. The report indicates that a licensing system is in place and, although not functioning perfectly, the amount of imports could be verified with sufficient accuracy. The 2008 CFC consumption was verified as 271.3 ODP tonnes, significantly lower than the maximum allowable consumption under the agreement of 328.4 ODP tonnes. However, the verified consumption is higher than the Article 7 data reported by the country (240.6 ODP tonnes). The Government of Germany, as lead agency, has been requested to advise the Government of the Islamic Republic of Iran to consider revising the Article 7 data reported to the Ozone Secretariat accordingly.

37. A number of activities were implemented during the year 2009. Further assistance to the foam sector was provided, and the final five foam companies received equipment. Fifty-five MAC workshop technicians were supported with R&R equipment and training, and a number of monitoring, project management and public awareness activities also took place. The report indicates that all reduction targets under the NPP were met. The unspent balance of the approved funding as of 1 January 2010 was US $431,524, equivalent to 3.9 per cent of the funding approved.

2010 Implementation programme

38. A number of activities are foreseen for 2010, such as a study in the foam sector to optimize, validate and develop water blown systems for foam applications where insulation is not a dominant factor. In addition, training materials and publications will be distributed to MAC workshops, and awareness raising and monitoring activities will continue.

Secretariat's recommendation

39. The Secretariat recommends that the Executive Committee:

(a) Notes the 2008 verification report and the 2009 annual implementation report of the national CFC phase-out plan (NPP) in the Islamic Republic of Iran;

(b) Approves the annual implementation plan for the year 2010; and

(c) Requests the Government of the Islamic Republic of Iran, with the assistance of the Government of Germany, as lead agency, to submit annual implementation reports regarding the previous year to the first meeting of the Executive Committee every year until the NPP is completed.

Maldives: Terminal phase-out management plan (UNEP/UNDP)

40. The TPMP for Maldives was approved at the 53rd Meeting of the Executive Committee at a total cost of US $180,000 plus agency support costs for UNEP and for UNDP. The first tranche of US $165,000 plus support costs was likewise approved at the 53rd Meeting. The second tranche of this TPMP was initially submitted to the 57th Meeting, however, due to lack of progress in the implementation of the activities, this was finally submitted and funded at the 58th meeting at a level of US $15,000 plus support costs. This report covers the implementation of the TPMP from April 2008 up to February 2010.

Progress report

41. During this period, 45 refrigeration technicians were trained in good practices in refrigeration. This included a refresher course for trainers based in vocational schools that provide refrigeration courses for technicians. Equipment supporting the training was also distributed during the period. Customs training courses were held as part of the normal training provided by the Customs department.

42. Extensive work has also started on the review of legislation in the country, with a number of consultation meetings held in 2008. The new Environment Protection and Management Act has been drafted and it includes Protection of the Ozone Layer in Section 89 of the Act, which has elements to initiate control on HCFC consumption.

43. With regard to the end-user incentive programme which covers the investment part being implemented by UNDP, the report indicates that terms of reference for a service provider are being developed. The Memorandum of Understanding (MOU) between UNDP and the Government to implement has already been signed.

Secretariat's comments

44. The Maldives has been reporting zero CFC consumption since 2006. It has been implementing the activities under the TPMP to ensure that this zero CFC consumption is sustained until 2010 and beyond. The Secretariat also notes that extensive awareness raising activities continue to be carried out in the Maldives and was informed by UNEP that this will assist in sustaining zero CFC consumption beyond 2010.

45. The Secretariat however notes the continued delay in the implementation of the investment component of the TPMP. While the original proposal for this component was to provide a number of end users with an incentive to retrofit their equipment, the progress report submitted indicates that some recycling equipment will also be purchased to support the retrofit programme. Very little progress is shown in the progress report for this component.

Secretariat's recommendation

46. The Executive Committee may wish to take note of the progress report on the implementation of the terminal phase-out management plan (TPMP) for Maldives, and request UNEP and UNDP to expedite the implementation of the end-user investment component of the TPMP, and to report to the Executive Committee at its 62nd Meeting on the progress of implementation of this remaining component.

Philippines (the): National phase-out plan (World Bank)

47. The NPP for the Philippines was approved in principle at the 38th Meeting of the Executive Committee in November 2002, with a total value of US $10,575,410 and agency support cost of US $896,788, to phase-out 2,017.6 ODP tonnes of CFCs. The first tranche of US $3,010,873 with agency support cost of US $259,979 was approved at the same meeting. Subsequent tranches were approved at the 41st, 44th, 47th, 51st and 54th Meetings, where the total amount for the NPP of US $10,575,410 plus agency support costs had been approved to cover activities from 2003-2008.

48. The maximum allowable CFC consumption level in the Philippines for 2008 was set at 400 ODP tonnes and 300 ODP tonnes for 2009. Verified CFC consumption based on actual import in 2008 was 169.44 ODP tonnes, which is 230.5 ODP tonnes lower than the maximum allowable consumption in 2008. The report also included information on the licenses issued for 2009, which shows that the recorded actual imports are 208.64 ODP tonnes which is well below the maximum allowable consumption of 300 ODP tonnes for 2009. The actual CFC consumption level will be provided in the 2010 verification report.

Progress report

Industry actions

49. The foam and refrigeration equipment manufacturing sector has eliminated its use of CFCs in the last few years. Most foam manufacturers have already switched to methylene chloride (MC), and some have stopped operations due to the economic conditions in the country.

50. The Government is also implementing the MDI transition strategy through the Department of Health (DOH) and Bureau of Food and Drug (BFAD). In August 2008, the BFAD confirmed that there is no single registration for salbutamol MDIs using CFCs and has therefore declared these to be phased out. The DOH no longer accepts MDIs product containing CFCs. The various stakeholder workshops to support this and to awareness building continues under the project.

Technical assistance activities

51. In the foam sector, the project encountered a problem with one of its beneficiaries due to issues with technology choice, and delays were caused by issues related to safety, availability of the selected technology and administrative issues. Identified solutions to these problems will be implemented in 2010 to complete this project.

52. The servicing sector is where the bulk of remaining ODS phase-out will have to be addressed. While training activities are in place in the sector in order to upgrade skills and raise technical standards for the sustainable recovery and recycling programme, another important activity in the sector is the implementation of the voucher system to provide tools and equipment to service shops. The programme also continues to focus efforts in coordinating certification of suppliers of tools and equipment; training and assessment (certification) of technicians, and the implementation of mandatory inspection of motor vehicles with mobile air-conditioning (MAC) systems. The voucher system was launched in 2006. In 2009, the activities focused more on the monitoring of the grantees, in particular taking into consideration the recommendations from the previous audit report to check that the right equipment was purchased, verify the performance of the equipment and monitor issues that need to be addressed.

53. The training component has been proceeding quite well, although some priority regions were finding difficulty in progressing with the training programmes, which required that the PMU meets with the training institutions to facilitate the process. As part of the technician accreditation programme, TESDA, the institute responsible for the implementation of the assessment and technician certification,

conducted a national conference to resolve the issues of slow accreditation and the reported that by July 2009, the technician certification requirement was completed. There were also many information education and communication (IEC) activities undertaken during this period aimed at the servicing sector. The report indicates that this was needed in order to push the full implementation of the voucher system and to inform the public of the new requirements for accreditation both for workshops and for service technicians.

54. By the end of 2009, US $7,617,121 had been disbursed, and the balance of US $2,958,289.71 will be disbursed in 2010 and 2011. The current work programme for 2010 submitted for consideration by the Executive Committee contains activities valued at US $1,486,486 to be disbursed in 2010. The remaining balance of US $1,471,803 will be disbursed in 2011, with an annual work programme 2011 submitted at the 63rd meeting for consideration of the Executive Committee.

2010 work programme

55. The planned activities for 2010 include the strict enforcement of the ODS licensing system to ensure zero CFC imports, continued awareness-raising activities especially on the details of the accreditation system for service shops and the mandatory MAC inspections prior to car registration renewals. The procurement of the outstanding equipment for the reclamation facility will be completed this year when it will become fully operational. Management and monitoring activities including enterprise inspection and technical audits will continue in 2010.

Secretariat's comments

56. The Secretariat noted the comprehensive progress report on the implementation of the Philippines NPP, together with the supporting documents, including the verification report on national ODS consumption in Philippines. The 2008 CFC consumption of 169.4 ODP tonnes reported by the Government of Philippines under Article 7 of the Montreal Protocol was already way below the maximum allowable consumption of 400 ODP tonnes for 2008. Preliminary data for 2009 imports also point to an import level of 208.64 which is also lower than the maximum allowable consumption of 300 ODP tonnes for 2009.

57. It was also noted that the 2009 consumption was higher than 2008, and this was explained by the fact that there was a higher demand for CFCs because the price of retrofitting and using other alternatives is still higher than CFCs. However, the Government is confident that it will be able to sustain compliance through the NPP activities by strict enforcement of its licensing and quota system which allows zero imports of CFCs in 2010.

Secretariat's recommendation

58. The Executive Committee may wish to:

(a) Take note of the progress report on the implementation of the 2009 work programme of the national CFC phase-out plan (NPP) for Philippines;

(b) Take note of the verification report of 2008 CFC consumption;

(c) Approve the annual implementation programme for 2010; and

(d) Request the Government of Philippines, with the assistance of the World Bank, to submit a progress report on the implementation of the 2010 work programme of the NPP no later than the 63rd Meeting of the Executive Committee, including a verification report of 2009 consumption.

Samoa: Terminal phase-out management plan (UNEP/UNDP)

59. The TPMP for Samoa was approved in principle at the 53rd Meeting of the Executive Committee at a total cost of US $150,000 plus agency support costs for UNEP and for UNDP. The first tranche of US $100,000 plus support costs was also approved at that meeting, while the second tranche was released at the 57th Meeting in April 2009. This report covers activities implemented by Samoa from April 2009 to February 2010.

Progress report

60. In 2009, a total of 100 technicians were trained in good practices in refrigeration bringing the overall number of trained refrigeration technicians in Samoa to 143 since the beginning of the train-the trainers' course in refrigeration. During the same period, 65 customs officers were trained. Samoa currently has 97 trained customs and enforcement officers.

61. The review of ODS policy and regulation has resulted in the final draft of the Atmospheric policy which includes ODS issues along with HCFCs. This is targeted to be completed by the end of 2010. Some equipment for training has been procured and distributed which includes 3 sets of recovery equipment. The incentive programme is not yet fully operational.

Secretariat's comments

62. Samoa has consistently reported zero CFC consumption since 2003. Its 2008 CFC consumption under Article 7 of the Montreal Protocol still remains as zero. Samoa has been implementing the activities under the TPMP to ensure that this zero CFC consumption is sustained until 2010 and beyond.

63. The Secretariat noted however the delays in the implementation of the end-user incentive programme, a component being implemented by UNDP.

Secretariat's recommendation

64. The Executive Committee may wish to take note of the progress report on the implementation of the terminal phase-out management plan (TPMP) for Samoa and request UNEP and UNDP to expedite the implementation of the end-user investment component of the TPMP, and to report to the Executive Committee at its 62nd Meeting on the progress of implementation of this remaining component.

II. REPORTS ON THE PRODUCTION SECTOR

China: CFC Production Phase-Out Programme: Verification of the 2009 Annual Work Programme (World Bank)

65. At its 56th Meeting, the Executive Committee approved the final tranche of the CFC production sector project in the People's Republic of China and the associated Accelerated Phase-out Plan. It also decided:

"(a) To continue monitoring activities and the utilization of project balances beyond the end of the agreements with the Executive Committee for the foams and halons and CFC production sector plans and the related accelerated phase-out sector plans in China …

(ii) China would continue to have independent financial audits conducted of the account of the three sector plans. The financial audit reports based on the format used in the previous years would be provided to the Executive Committee on an annual basis from 2009 and beyond. China would provide the necessary information for the project completion reports;

(iii) The World Bank would facilitate the review and submission of any adjustments to the work plans and financial audit reports to the Executive Committee, and submit the related project completion reports upon the final expenditure of funds." (decision 56/13 (a)).

66. A verification report was submitted to the 57th Meeting that confirmed 2008 production levels. However, since the technical auditors had not yet reviewed the licenses for MDI sales, they could not verify the use of the CFC production for MDIs as required by the Agreement between China and the Executive Committee for the CFC/CTC/Halon accelerated phase-out plan. The Executive Committee decided to release the remaining funding for 2009 in light of the verification results indicating that China had met the CFC production reduction target, as established in the CFC production sector agreement for the year 2008. The Executive Committee also requested the Government of China and the World Bank to include the review of licences for the sale of CFCs to MDI manufacturers in 2008 and 2009 as part of the verification report to be submitted to the 60th Meeting of the Executive Committee (decision 57/31 (a) and (b)).

Introduction

67. Accordingly, the World Bank is submitting to the 60th Meeting the verification report on the implementation of the 2009 China CFC production phase-out programme. For reasons of economy, only the summary of the verification report is attached as Annex I to this document. The full verification report could be made available to members of the Executive Committee upon request.

Verification of the 2009 CFC production in China

68. The verification was conducted between 4 and 16 January 2010 by a team of three with relevant technical and financial expertise. The team was headed by Mr. Vogelsberg, a consultant who had been carrying out verifications of the CFC plants in China on behalf of the World Bank for a number of years. The team visited the CFC plant Zhejiang Juhua Fluoro-Chemcial Co. Ltd. in Quzhou City, Zhejiang Province. The report contains a summary of conclusions and four annexes. The summary of the conclusions provides the verification team's overall assessment of the performance of the 2009 work programme in achieving the targets set in the Agreement.

69. The verification report concludes that China complied with the annual CFC production target set out in the Agreement for the year 2009, with the total actual production of CFCs being 547.37 ODP tonnes. This is 2.63 ODP tonnes below the maximum production level allowed for 2009 under the Agreement. As shown in Table 1, the closing stocks of CFCs for MDI uses amounted to 234.241 ODP tonnes at the end of 2009, which represented an increase of 8.630 ODP tonnes of stocks compared with levels at the end of 2008.

Table 1

TOTAL PRODUCTION OF CFCS FOR MDIS AND STOCKS (2009)

Type of CFC product for MDI uses	Total production of CFCs For MDIs	Stock of CFCs for MDI uses in 2009 (ODP tonnes)		
	ODS (ODP tonnes)	Opening	Closing	Change
CFC-11	48.810	135.312	42.642	-92.670
CFC-12	498.560	90.299	191.599	+101.300
Total	547.370	225.611	234.241	+8.630

70. There was no CFC-13 production in 2009. The verification report indicated that after the completion of the 2007 production campaign all six plants had been closed and the production lines dismantled with key equipment destroyed. The one exception was the CFC-11/CFC-12 production line at Zhejiang Juhua Fluro-chemical Co Ltd (SRI#B14) that has been converted to a swing plant to primarily produce HCFC-22 and, under license, to produce up to 550 ODP tonnes of CFC-12 for use in MDIs in both 2008 and 2009.

71. Annex I contains a general overview of the Juhua facility, which began HCFC-22 production on 23 July 2007. It states that the HCFC-22 market became very soft in mid-2008 and the production of HCFC-22 for the year 2009 was carried out between 12 March 2009 and 31 August 2009. It describes the production campaigns for CFCs at the Juhua facility. The production of CFC-12 in 2009 in Juhua was carried out in two campaigns, between 1 and 13 February 2009 and between 1 and 17 December 2009, for a total of 28 operational days. CFC-11 was only produced during the second campaign for a total of 16 operational days. Annex I describes the verification process of CTC and HF transfers and consumption figures which are consistent with reported figures, and of CFC daily production transfer slips.

72. Annex I also provides information on all sales of CFCs for MDIs in 2009. All sales are summarized by the company, including amount purchased, name and address of the purchasers, date and serial number of the invoice, and the delivering record. There are fifteen customers, including five domestic dealers (not the MDI producers themselves), one exporter to Russia for its MDI uses and nine domestic MDI manufacturers that purchased CFCs from Juhua in 2009. The CFC production verification team confirmed that all the data on sales to the above-mentioned dealers and MDI manufacturers are complete and correct.

73. Annex II contains the CFC production phase-out verification, and includes several sections including: plant identification, the composition and function of the verification team, plant history (which covers annual data on capacity and production of CFC-11, CFC-12, CTC and HF since the construction of the plant), plant activity in the year verified, plans for gradual closure (which covers annual data on CFC-11 and CFC-12 quotas, production, sales and opening and closing stocks since the baseline year), annual HF/CFC and CTC/CFC ratios, operational days per year, monthly CFC production data and raw material consumption data, and overall HF balances in 2009.

74. Annex III contains the verification of sales of CFCs for MDI uses in 2009. It lists the purchasers of CFCs for MDI in 2009 (including dealers and MDI manufacturers) and provides information on the sales of CFC-11 and CFC-12 from Juhua to dealers, from Juhua to MDI manufacturers, and from each dealer to MDI manufacturers. It also provides a summary of export of CFCs in 2009, sales of CFCs by Juhua to dealers and MDI manufacturers in 2009, and sales of CFCs to MDI manufacturers (including export to Russia).

75. Annex IV contains the results of the financial audit presented by the financial specialist in the verification team. The focus of the audit is the verification of CFC production obtained from the examination of financial records on the procurement, consumption of raw materials, and sales. The report provides the audited results of CTC, HF, and CFC-113a consumption and CFC production plant by plant. Annex IV states that the verified CFC-11 production in 2009 was 48.81 metric tonnes and that CFC-12 production was 498.56 metric tonnes. The total verified sales of CFC-11 in 2009 were 209.00 metric tonnes, including 67.75 metric tonnes from previous stock and 141.25 metric tonnes that had been produced in 2009.

Secretariat's Comments

Export for approved essential use exemptions for pharmaceutical grade CFCs

76. The CFC production verification team was able to confirm that China's total exports of CFCs in 2009 was within the limit of the amount of CFCs approved. The amount of CFCs that passed through Chinese customs to Russia is deemed to be part of the total sales of CFCs for MDI uses. The Russian essential use exemption for CFCs for MDIs in 2009 was for 248.0 metric tonnes (decision XX/2). The audit report indicated that China had exported 158.5 metric tonnes.

77. The Agreement between China and the Executive Committee for CFC/CTC/halon accelerated phase-out allowed exports of up to 50 tonnes of CFC in 2009 except for essential uses as agreed by the Parties. All of China's exports were to meet the essential use exemption allowed by the Parties for Russia in 2009 by decision XX/2.

Review of licences for the sale of CFCs to MDI manufacturers in 2008

78. The World Bank provided an explanation of the CFC sales license management system in China. It also provided a list of purchasers of CFCs for MDI uses in 2008 including their sales license number and addresses, a listing of sales of CFC-11 and CFC-12 for MDI uses in 2008 by purchaser, date, amount purchased and invoice number.

79. The total sales of CFCs based on the licenses were 339 metric tonnes. All of the sales were associated with MDI manufacturers or dealers that had received licenses from the Government of China. However, the tonnage from the sales associated with the licenses (339 metric tonnes) exceeded the amount indicated in the 2008 verification report (321 metric tonnes) by 18 metric tonnes.

80. The World Bank explained that the licensing system for monitoring the sales of CFCs to MDI producers had been enhanced in April 2009 in response of decision 57/31 of the 57th Meeting of the Executive Committee. New procedures were applied retroactively in order to confirm the actual sales to MDI producers in 2008. Based on the new procedures, new information pertaining to the actual sales of CFCs to MDI producers was revealed. The Bank acknowledged that the new figures are different from the data contained in the 2008 verification report. The difference resulted from the fact that the methodology used in the 2008 verification report did not capture all the sales that had been made to the MDI producers. Notwithstanding the discrepancy, both the verification report and the information provided with respect to licenses confirmed the use of CFC production in 2008 for MDI CFCs as required by the Agreement.

Overall assessment of the 2009 verification in light of the guidelines for verification of ODS production phase-out

81. The verification of the implementation of the 2009 work programme was carried out by the same team that had been conducting this exercise for the past several years. It was carried out in accordance with the guidelines and methodology approved by the Executive Committee. The results of the verification are presented in line with the approved formats, and are supported by adequate documentation that enables tracking and validation of CFC production, stockpiles, and the use of feedstock. The results of the verification of the CFC production confirm that China produced less than 550 ODP tonnes of CFC in 2009.

82. In accordance with decision 56/13, the World Bank provided license data in addition to the verification report. All of the sales were associated with MDI manufacturers or dealers that had received licenses from the Government of China. The volume of tonnage of CFC sales for MDIs associated with licenses was exactly the same as the data indicated in the verification report.

Stockpiling and essential uses

83. The verification report indicated stockpiles amounting to 234.241 metric tonnes of CFCs (191.599 metric tonnes of CFC-12 and 42.642 metric tonnes of CFC-11). China's agreement allows for the production of CFCs for essential use exemptions in China. China received an MDI essential use exemption for the consumption/production of 972.2 metric tonnes in 2010 at the Twenty-First Meeting of the Parties (decision XXI/4, paragraph 1 and Annex).

Secretariat's recommendation

84. The Secretariat recommends that the Executive Committee commends the Government of the People's Republic of China and the World Bank for the good efforts made to comply with decisions 56/13 and 57/31 and in successfully implementing the audit for 2009 to confirm the level of production of CFCs for MDIs in China and the remaining stocks.

China: Phase-out of the production and consumption of CTC for process agent and other non-identified uses (phase I): 2009 verification (World Bank)

Introduction

85. The World Bank submitted the last annual programme for the implementation of the Agreement with the People's Republic of China to phase out the production of CTC for controlled uses and the consumption of CTC and CFC-113 as process agents (Phase I) to the 56th Meeting. Funding for 2009 constituted the last funding tranche under the agreement. The tranche was released after satisfactory verification of the 2008 activities was provided to the 57th Meeting. The World Bank has submitted to the 60th Meeting the verification of the 2009 activities.

86. The Executive Committee might recall that at the 56th Meeting, the World Bank had advised on planned activities related to the remaining unspent balances under the agreement. In order to manage CTC production and consumption beyond 2010, the country intended to use the existing policy framework to reduce the CTC production to 15 per cent of the baseline for meeting basic domestic needs. Consumption would be further limited to the levels agreed in light of decision X/14 paragraph 3 (b) of the Meeting of the Parties and the Agreement between the Government of China and the Executive Committee of November 2002 (38th Meeting); that relates to 220 ODP tonnes of CTC consumption for the process agent (PA) use.

87. The 220 ODP tonnes of allowed consumption is expected to be allocated for the chlorosulphonated polyethylene (CSM) activity, an emission control activity where a reduced CTC consumption will continue, while closing down the remaining two chlorinated rubber projects. For the CTC consumption for laboratory uses, the Ministry for Environmental Protection (MEP) plans to seek an exemption through the essential uses exemption procedure under the Montreal Protocol. MEP intends to continue carrying out monitoring and verification of the CTC producers and consumers to ensure the sustained results from the sector plan, and will continue submitting reports to the Executive Committee on the results of such monitoring and verification after 2010. In its decision 56/60, the Executive Committee took note of the proposed plan to extend implementation of the CTC phase-out sector plan for Phase I beyond 2010 and the proposal to allocate the estimated unspent fund balance of US $1.3 million for these activities.

88. The verification of the production and the consumption of CTC and CFC-113 as process agents in 2009 consists of two parts: the CTC production verification, and the verification of consumption of CTC and CFC-113 as process agents under Phase I. The Secretariat is attaching, as Annex II, the "Verification of China's production and consumption in CTC – Technical issues identified by the Secretariat" and as Annex III, the "China 2009 CTC production verification summary report" as submitted by the World

Bank, which includes important insight into the complex CTC production sector in China as well as the methodology and the overall findings of the verification team. The Secretariat is prepared to make the entire submission of the World Bank available to members of the Executive Committee upon request.

Verification of the CTC production in 2009

89. The production verification was carried out between January and February 2010. The report included a technical audit part and a financial audit part. It consisted of the visits to and investigation of eleven active CTC producers and one CTC residue distiller out of the 19 CTC producers in China. The other producers had closed down and were not visited. Because of incomplete data at one plant, Sichuan Honghe, the verification team was unable to arrive at a precise confirmed figure for all twelve plants producing CTC in China in 2009. With precise data from eleven plants and an estimate of CTC produced by Sichuan Honghe the verification team reported that China's production (as defined by the Montreal Protocol) was 5,166.02 ODP tonnes (4,696.38 metric tonnes of CTC), which was below the maximum agreed production of 7,341.70 ODP tonnes. The uncertainty in this figure due to the incomplete verification is 602.97 ODP tonnes (548.15 metric tonnes), leading to a possible maximum consumption of 5,768.99 ODP tonnes (5,244.54 metric tonnes); this value is still well below the agreed National maximum production.

90. The verification team reported that the total CTC production including production for feedstock uses was 55,676.307 metric tonnes in 2009 (61,243.68 ODP tonnes) if the uncertainty of 548.15 metric tonnes (602.97 ODP tonnes) because of the incomplete verification of Sichuan Honghe is taken into account. However 49,639.90 metric tonnes (54,603.89 ODP tonnes) were reported by MEP as being used as a feedstock in the production of non-ODS chemicals. To this number, an amount that is smaller or equal to 548.15 metric tonnes (602.97 ODP tonnes) has to be added for consistency to allow for the incomplete verification of Sichuan Honghe. No CTC was reported as having been destroyed.

91. A total of 791.6 metric tonnes of CTC were reported by MEP as being used in new process agent applications listed in decision XIX/15 of the Nineteenth Meeting of the Parties and those newly identified by MEP. A more detailed description of the verification of the CTC production can be found in Annex II.

Verification of the consumption of CTC and CFC-113 as a process agent under Phase I in 2009

92. The verification of the consumption of CTC and CFC-113 was carried out in January 2010. There was no consumption of CFC-113 in 2009. From Phase I of the sector plan, there are only three plants which are still producing and using CTC as a process agent, while the other plants had either closed or converted to a non-ODS process. These three plants are:

Company name	Process agent application
Jilin Chemical Industrial Co., Ltd.	Chlorosulphonated polyethylene (CSM)
Jiangsu Fasten Fine Chemical Co. Ltd.	Chlorinated Rubber (CR)
Shanghai Chlor Alkali	Chlorinated Rubber (CR)

93. The team verified the consumption of CTC at each of the three plants. The report provides a summary on each of the enterprises visited, including a description of the enterprises, the verification carried out and the results. The CTC purchased by the plant was treated as part of the national consumption in 2009 and was compared to the quota issued by MEP. The verification provided also an update on the CTC emission control project for CSM, which had experienced severe technical problems with imported equipment.

94. The verification confirmed that the 2009 CTC purchases in the PA sector (Phase I) were as follows:

Company name	Process agent application	Consumption in 2009	
Jilin Chemical Industrial Co., Ltd.	CSM	258.40 mt	284.24 ODP tonnes
Jiangsu Fasten Fine Chemical Co. Ltd.	Chlorinated Rubber	100.00 mt	110.00 ODP tonnes
Shanghai Chlor Alkali	Chlorinated Rubber	61.74 mt	67.91 ODP tonnes
Total		**420.14 mt**	**462.15 ODP tonnes**

95. The verified CTC consumption in 2009 was 462.15 ODP tonnes, which was below the 2009 maximum allowable CTC consumption (493.00 ODP tonnes) in the Agreement for Phase I of the CTC sector plan.

Secretariat's comments

Verification of the 2009 CTC production and the consumption of CTC and CFC-113 as process agent under Phase I of the sector plan

96. The verification was carried out in accordance with the verification framework developed by the World Bank for carrying out verifications of CTC phase-out sector plans for China and India, and which was noted by the Executive Committee. The teams that implemented the exercises have the relevant expertise and have undertaken the same verifications in the previous years.

97. According to the arrangement set out in the Agreements for Phase I and Phase II of the CTC sector plan, this verification covers the CTC production for both phases but only the consumption in Phase I of the sector plan. To verify Phase II missions are needed to a significant number of CTC-consuming companies that cannot be done in time for the April 2010 meeting of the Executive Committee. The Agreement for Phase I of the sector plan establishes four criteria for assessing the success or otherwise of the annual work programme and these are presented in the following table, with the results of the years completed, including 2009.

CTC production and consumption in ODP tonnes

Year	CTC production (Row 1 of the agreement)		Use of CTC for CFC feedstock consumption (Row 2 of the agreement)		Use of CTC for the 25 PA applications (Row 4 of the agreement)		Use of CFC-113 for PA applications (Row 6 of the agreement)	
	Allowed	Verified	Allowed	Verified	Allowed	Verified	Allowed	Verified
Base	86,280	N/A	N/A	N/A	3,825	N/A	17.2	N/A
2001	64,152	N/A	55,139	NA	4,347	N/A	17.2	N/A
2002	64,152	N/A	45,400	NA	5,049	N/A	17.2	N/A
2003	61,514	59,860	45,333	39,839	5,049	3,080	17.2	17.1
2004	54,857	50,195	39,306	34,168	5,049	3,886	14	10.8
2005	38,686	33,080	28,446	25,811.3	493	485.02	14	3.2
2006	28,662	28,470	21,276	18,590.9	493	461. 4	10.8	0
2007	18,782	13,438	11,396	8,987	493	482	8.4	0
2008	8,188	3,835	847	715.62	493	483	0	N/A
2009	**7341.7**	**5166.0**[1]	**847**	**749.7**	**493**	**462.2**	**0**	**N/A**[2]

98. The results from the verification, as shown against the targets in the Agreement in the last row of the table above, indicate that China achieved all the targets in the Agreement for Phase I of the sector plan for the year 2009. However since the verified CTC production of 5,166.0 ODP tonnes includes the maximum allowable consumption for Phases I and II of the sector plan of 493 and 6,945 ODP tonnes,

[1] With an uncertainty of 602.97 ODP tonnes, leading to a maximum possible production of 5,768.99 ODP tonnes

[2] No verification has been required after two consecutive years with a consumption of zero

respectively and the allowance for CFC production, there is still a balance of approximately 4,704 ODP tonnes of CTC from the 2009 production not accounted for, after deducting the 462.2 ODP tonnes consumed by the three applications from Phase I as shown in this verification. This could represent the CTC consumed by applications in Phase II of the sector plan, which will be examined by the World Bank in the verification of the Phase II to be submitted to the 61st Meeting.

99. A total of 791.6 metric tonnes, or 870.8 ODP tonnes of CTC was reported by MEP in 2009 as being used in process agent applications listed in decision XIX/15 of the Nineteenth Meeting of the Parties and those newly identified by MEP. It is significantly below the ceiling of 14,300 ODP tonnes which was set in the Agreement for Phase II to cover these applications.

Secretariat's recommendation

100. The Secretariat recommends that the Executive Committee takes note of the verification report of the CTC production and consumption for process agent and other non-identified uses (Phase I) of the China CTC sector plan for 2009.

China: Strategy For Gradual Phase-Out Of 1,1,1-Trichloroethane (TCA) Production (Second Stage Programme) (World Bank)

101. On behalf of the Government of the People's Republic of China, the World Bank submitted verification reports for the years 2008 and 2009 to the Fund Secretariat. The Secretariat has not attached the World Bank's submissions but can provide them to members of the Executive Committee upon request.

Background

102. At its 56th Meeting, the Executive Committee approved the second and final stage implementation programme of the 1,1,1-trichloroethane (TCA) production sector plan in China and released the remaining funds of US $0.7 million and the associated support costs of US $52,500 for the World Bank. The request included a verification report for 2007 production.

103. In 2004, the Executive Committee, at its 43rd Meeting approved in principle a total of US $2.1 million for the implementation of the Agreement for the phase-out of TCA production in China, under which the Government of the People's Republic of China is committed to completely phase out the production of TCA before January 2010, five years in advance of the requirement of the Montreal Protocol.

Verification of TCA production closure

104. There were four TCA plants in China in 2002 (the base year for the sector plan). The total TCA production was 1,205 metric tonnes (or 121 ODP tonnes) in 2002. The verification reports submitted to the 51st Meeting confirmed that China had closed and dismantled three of the four plants.

105. Zhejiang Juhua Chemical and Mining Industry Co. was the only active TCA producer in 2008 and 2009. It was visited by the verification team on 23 February 2009 and 15 January 2010. The plant, with a designed capacity of 1,500 metric tonnes per annum, started production in 1995. The plant operates a batch process, reacting HCl (a by-product from its chloroparaffin process) with the vinylidene dichloride (VDC) to produce a crude product. The VDC/TCA crude is then fed to a batch distillation packed column where unreacted VDC is removed before the TCA is vaporized and collected as the final distillate. The final distilled TCA is collected in a receiver tank and packaged directly in drums, with transfer slips documenting the movement from the production unit to the warehouse.

106. The reports for 2008 and 2009 contain a summary of conclusions and three annexes. Annex I describes the verification process, the assessment, and the findings. Annex II contains the verified monthly production data and raw material consumption data, as well as details of the complete closure of the production line of the TCA producer. Annex III includes the financial verification report results, which confirm the verified production data.

107. The verification team examined the daily and monthly record of VDC charge to the batch reactor to derive the VDC consumption. Transfer slips from TCA production to the warehouse were examined with information on date, number of drums, net weight of each drum and total weight for each of the eleven months of the year that the plant had been operating. The figures from every drum filling record were correctly reported. All VDC shipment invoices from suppliers were examined against the receipts reported by the plant for each month. Since HCl is a by-product of the chloroparaffin process, it is not measured or recorded by the plant. The verification team's financial analyst examined the VAT invoices and the product delivery slips of finished product from the warehouse that had been retained by the plant's accounting office as well as the material receipt vouchers for VDC purchases, which had been co-signed by the warehouse staff and the person responsible for purchasing VCD.

108. The verification team confirmed that in 2008 the plant operated for 208 days and produced 77.824 ODP tonnes (778.240 metric tonnes), which is 1.176 ODP tonnes lower than the target limit of 79 ODP tonnes as specified in the Agreement between the People's Republic of China and the Executive Committee. Since this plant is the only active plant, its production represents the country's total TCA production. As a result, China complied with the target in the Agreement.

109. The verification team confirmed that in 2009, the plant operated for 174 days and produced 77.8162 ODP tonnes (778.162 metric tonnes), which is 1.1838 ODP tonnes lower than the target limit of 79 ODP tonnes as specified in the Agreement between the People's Republic of China and the Executive Committee. Since this plant is the only active plant, its production represents the country's total TCA production. As a result, China complied with the target in the Agreement.

110. The total TCA sales reported in 2009 is 67.608 ODP tonnes. The closing stock at the end of 2009 is 114.112 metric tonnes. The verification team reported that the production of TCA by the company ceased on 27 December 2009, with the dismantling and destruction of the equipment critical for the production line completed by 13 January 2010. There is no possibility of resuming TCA production.

Secretariat's Recommendation

111. The Secretariat recommends that the Executive Committee commends the Government of the People's Republic of China and the World Bank for successfully dismantling the remaining TCA production facility in China.

Venezuela (Bolivarian Republic of): CFC production phase-out programme (World Bank)

112. The Government of the Bolivarian Republic of Venezuela, through the World Bank, has submitted a verification report on the cessation of CFC production at PRODUVEN, Productos Halogenados de Venezuela, C.A. in Venezuela (Bolivarian Republic of) for the year 2009. A copy of the report is available upon request.

Background

113. In 2004 at its 44th Meeting, the Executive Committee approved, in principle, a total of US $16.5 million for the implementation of the Agreement for the Bolivarian Republic of Venezuela CFC production sector, under which the Government of the Bolivarian Republic of Venezuela committed to a condition of a maximum level of total CFC production for the period 2004-2006, with a total phase out by

2007 (decision 44/59). By the end of 2006, PRODUVEN, the sole producer of CFCs in Venezuela (Bolivarian Republic of), terminated its CFC production and refitted its facility for the production of HCFC-22. The World Bank submitted the verification report for the 2007 level of CFC production in 2008 to the 54th Meeting of the Executive Committee and received the final funding tranche of US $1.05 million, plus the associated support costs.

114. As a condition of approval of the final funding tranche, the Executive Committee requested the World Bank to continue the verification of the PRODUVEN facility in 2009 to ensure the permanent closure of the plant's CFC production capacity (decision 54/15(a)). The Secretariat had noted that the only assurance that the swing plant would not revert to CFC production was to deny the plant access to CTC, the key feedstock for CFC production. In this respect, it was important for the Government of the Bolivarian Republic of Venezuela to continue to implement the existing licensing control over the import of CTC. The World Bank has carried out a verification of the PRODUVEN plant to ensure that there had been no CFC production since 2007.

Verification report on the cessation of CFC production at PRODUVEN in the Bolivarian Republic of Venezuela in 2009

115. The verification was carried out between 7 and 11 December 2009 by Juan Carlos Reinhart, the same technical consultant who had conducted the verification for 2008, which was submitted to the 58th Meeting. The consultant used the recommendations from the 2006-2007 verification report, which had been conducted by Mr. Vogelsberg, to ensure that the recommended actions to permanently close down the CFC production had been implemented. Specifically, the auditor checked the access of the plant to CTC, the dismantling of the CFC production-related equipment, the consumption of HF (the common raw material for the production of CFC and HCFC-22) and the balance of the remaining inventory of CFCs and CTC from levels recorded at the end of 2007. The 2009 report confirmed that the findings of previous audits and reports are still valid.

116. There are several annexes attached to the verification report, including:

- Annex I, which contains the closure verification process and the details for the steps taken in CFC plant closure;
- Annex II, which contains the ODS production phase-out verification;
- Annex III, which contains physical evidence of CFC closure activity; and
- Annex IV entitled "Additional Documentation", which includes *inter alia* annual report data, external auditor reports, the consumption of HF and chloroform, hydrochloride consumption, storage tank information, analysis samples, invoices, affidavits, government documents, and data on the production of HCFC-22 and the HF/HCFC-22 and chloroform/HCFC-22 ratios.

117. The review of the annual data reported for the year 2009 shows that there had been no ODS purchases from other suppliers up to 30 November 2009. Financial and sales data also confirmed that PRODUVEN had not procured ODS from other producers during 2009.

118. The results of the verification showed that PRODUVEN produced no CFC-11 or CFC-12 in 2009. There were no stockpiles of CFC-11 in 2009. It verified stockpiles of 301.4 metric tonnes of CFC-12, which the Bolivarian Republic of Venezuela subsequently also reported to the Ozone Secretariat in the context of decision XXI/4, paragraph 4. Analysis of the operational and financial books showed that no CFC-11 or CFC-12 had been imported in 2009. The verification confirmed the CFC-12 production, inventory, and sales data submitted by the plant for the period January to December 2009 as shown in the Table 1 below. The plant now only produces HCFC-22.

Table 1

CFC-12 PRODUCTION AUDIT SUMMARY

	Item	Data	Remarks
A	Total opening stock as of 1st January 2009 (metric tonnes)	353.884	
B	Imports	Nil	
C	Gross production (metric tonnes)	Nil	
D	Operative losses (metric tonnes)	11.548	
E	Domestic sales (metric tonnes)	Nil	
F	Export sales (metric tonnes)	40.894	
G	Closing stock 30 November 2009 (metric tonnes)	301.442	(A-B-C-D-E-F)

119. The verification confirmed that there had been no production or importation of CTC in 2009. PRODUVEN submitted an affidavit attached to the verification report stating that they have not imported any CFCs or CTC during the year 2009. There has also been no consumption of CTC since the cessation of CFC production. CTC stock verification levels in 2009 were the same as they had been in 2007 and 2008.

Table 2

	31 December 2007	31 December 2008	30 November 2009
Closing stock of raw material CTC	127.740 metric tonnes	127.740 metric tonnes	127.740 metric tonnes
Closing inventory of CFC-11	1.400 metric tonnes	zero	zero
Closing inventory of CFC-12	695.715 metric tonnes	353.884 metric tonnes	301.442 metric tonnes

120. There has been a remaining inventory at the plant of 127.74 metric tonnes of CTC since 2006. In spite of having obtained authorization to export this remaining stock, as of November 2009 PRODUVEN has not been able to identify a foreign importer for it. This CTC stock will most likely remain at the plant until a final clean destination is agreed for it.

121. The analysis of all operating and financial procedures concluded that the record information system is precise and realistic.

Secretariat's comments

122. At its 58th Meeting, the Executive Committee requested the Bolivarian Republic of Venezuela and the World Bank to submit the annual plan for 2009 to the Fund Secretariat for inclusion in the report on approved projects with special reporting requirements, to be submitted to the 59th Meeting (decision 58/15(d)(ii)(a)). The Executive Committee noted the submission of that plan at the 59th Meeting.

123. The Executive Committee also requested the World Bank to conduct this final verification of the PRODUVEN facility to report on 2009 activities to ensure the permanent closure of the CFC production capacity at the plant.

124. The audit on the cessation of CFC production was carried out by the World Bank in accordance with decision 54/15(a) of the Executive Committee and was implemented in compliance with the guidelines for verifying ODS production phase-out approved by the Executive Committee. The results confirmed that there had been no CFC production by the PRODUVEN Plant after the closure in December 2006, and that the plant had switched to the production of HCFC-22. The results also

reconfirmed the actions that had been taken by the Government of the Bolivarian Republic of Venezuela to ensure the permanence of the CFC production closure, and preventing imports of CTC, one of the key feedstocks for the production of CFC.

Secretariat's recommendations

125. The Secretariat recommends that the Executive Committee commends the Government of Bolivarian Republic of Venezuela and the World Bank for the good efforts made to comply with decision 54/15(a) and in successfully implementing the audit for 2009 to confirm the sustained cessation of CFC production at the PRODUVEN plant in the Bolivarian Republic of Venezuela.

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CHINA CFC PRODUCTION PHASE-OUT PROGRAM
2009 VERIFICATION REPORT
JANUARY 16, 2010

Inspection Team

F.A. Vogelsberg: Primary text preparation - Annex I
Hua Zhangxi: Mission Leader; Data Summary - Annex II (Production CFC Phase-out 2009 Verification)
and Annex III (Verification of sales of CFCs for MDI uses in 2009)
Wu Ning: Financial Verification of CFC Production for China in 2009- Annex IV

Assisted and Accompanied By

Lin Nanfeng: (FECO/MEP)

Inspection Mission Time

January 14-16 2010

Enterprises Visited

Zhejiang Juhua Fluoro-Chemcial Co. Ltd- Quzhou City, Zhejiang Province,

Report Format and Contents

- Verification conclusions for CFC Production in China for 2009.
- Annex I – Report for visit to Juhua Fluoro-chemical Co.Ltd
- Annex II - Production CFC Phase-out 2009 Verification
- Annex III – Verification of CFC sales for MDI uses in 2009
- Annex IV– Financial verification of CFC Production for China in 2009

Verification Conclusions with respect to China's CFC Production in 2009

In accordance with the "CFCs/CTC/halon Accelerated Phase-out Plan in China", the maximum allowable CFCs production in 2008 was 550 ODP tonnes, which is specifically assigned for MDI uses. In 2007, based upon the assessment refer to technical and economical status, Chinese Government approved that the CFC production line of Zhejiang Juhua Fluoro-chemical Co. Ltd (Juhua, SRI B14) to be retrofitted to a sole production line for swing production of HCFC-22 and CFC-11/12. In 2008, Chinese Government issued quota of 550 ODP tonnes to Juhua. Similarly, in 2009, another quota of 550 ODP tones of CFC11/12 was issued to Juhua to meet the requirement of manufacture of MDIs in China and export to Russia.

The verified total production of CFCs in China 2009 is 547.37 ODP tonnes. The following is the breakdown by product varieties

Type of CFC product for MDI uses	Total production of CFCs for MDI uses		Stock of CFCs for MDI uses in 2009 (MT)		
	ODS (MT)	ODP (tonnes)	Opening	Closing	Change
CFC-11	48.810	48.810	135.312	42.642	-92.670
CFC-12	498.560	498.560	90.299	191.599	+101.300
Total	547.370	547.370			

CTC consumption for producing 48.81 MT of CFC-11 in 2009 is 58.034 MT. The average CTC/CFC-11 ratio is 1.189 (theoretical 1.12) that is close to the historical normal ratio of Juhua.

CTC consumption for producing 498.56 MT of CFC-12 in 2009 is 678.45 MT. The average CTC/CFC-12 ratio is 1.361 (theoretical 1.272) that is close to the historical normal ratio of Juhua.

HF consumption for producing 48.81 MT of CFC-11 in 2009 is 7.682 MT. The average HF/CFC-11 ratio is 0.157 (theoretical 0.145) that is close to the historical normal ratio of Juhua.

HF consumption for producing 498.56 MT of CFC-12 in 2009 is 106.64 MT. The average HF/CFC-12 ratio is 0.360 (theoretical 0.331) that is close to the historical normal ratio of Juhua.

The production of CFC-12 in 2009 in Juhua was carried out in two campaigns, from February 1 to February 13 and from December 1 to December 17. Total operational days are 28 days. CFC-11 was only co-produced with CFC-12 in the second campaign for 16 days.

The verification process as well as the assessment and findings are described in Annex I to the Verification Report.

All the verified annual product balance, including opening stock, production, sales and closing stock, as well as the monthly production data and raw material consumption data are recorded in the corresponding Section D2 of Annex II to the Verification Report.

In 2009, 77 MT of CFC-11 for MDI uses were sold out from Juhua and delivered to 4 dealers (including one exporter) as well as 159.9 MT of CFC-12 for MDI uses were sold out from Juhua and delivered to 6 dealers (including one exporter). Meanwhile, 64.25 MT of CFC-11 for MDI uses were sold out from Juhua and delivered to 6 MDI manufacturers as well as 237.3 MT of CFC-12 for MDI uses were sold out to 7 MDI manufacturers. The summarized sales of CFCs for MDI uses from Juhua (including sales to dealers and MDI manufacturers) are 538.45 MT (538.45

ODP tonnes). The summarized sales of CFCs to MDI manufactures (including, sales from Juhua directly to MDI manufacturers, sales from dealers to MDI manufacturers and export to Russian) in 2009 are 602.575 MT (602.575 ODP tonnes), which is larger than the summarized sales of CFCs for MDI uses from Juhua in 2009. It means that there were no CFCs that were specifically approved for Juhua to be produced for MDI uses sold to sector other than MDI manufacture sector in 2009. The detailed sales information of CFC-11 and CFC-12 for MDI uses in 2009 (including sales of Juhua as well as sales of concerning dealers) is recorded in Annex III to the Verification Report.

The financial verification results confirm the above-mentioned conclusion as described in Annex IV to the Verification Report.

ANNEX I

Report for visit to Juhua Fluoro-chemical Co. Ltd

General Overview

The CFC11/12 – HCFC-22 swing plant shutdown December11, 2008 and remained idle until February 1 2009 when it restarted for a 12 day campaign producing CFC-12 for MDI applications. The plant remained idle from February 13 until March 12 (28 days) when it was restarted for a 172 day HCFC-22 campaign (March 12 through August 31). The plant was idle from September 1 until December 1 (91 days) when it was restarted for a 16 day CFC-11/12 campaign. The CFC-11/12 campaign terminated December 17th and the plant remained idle the balance of 2009 (15 days).

From the above dates we summarized 2009 plant activities as follows:

28 days producing CFCs
172 days producing HCFC-22
155days idle.

Verification process

CTC transfers from the CMs Plant were verified as 749.451 MT. Transfer slips for each transfer were summarized to arrive at the annual amount for the two CFC campaigns. At the start of 2009, the CMs storage tank already contained some CTC since the plant was producing CFCs when shutdown in December 2008. At the end of the February 2009 campaign, 19.559 MT of CTC was transferred back to the CMs Plant so the raw material tank could be cleaned and charged with chloroform to permit HCFC-22 production. The CTC transfers and consumption figures adjusted for inventories were consistent with reported quantities.

HF transfers and consumption figures were verified as accurate and were properly accounted for transitions from CFC and HCFC-22 production. At the end of the February CFC campaign (February 20th) 7.768 MT of HF remaining in the plant storage was credited back to the HF plant (a paper transaction) so there would be a zero HF inventory at the end of the CFC campaign. This quantity was charged against HCFC-22 production when the plant was restarted March 12 on a HCFC-22 campaign.

CFC daily production transfer slips were totaled for the two separate CFC campaigns and matched reported figures. Small inventory losses in 2009 occurred (0.23 MT of CFC-11 and 0.06 MT of CFC-12). They were properly included as part of reported 2009 production figures.

Operating and idle days for the plant was verified by checking its control room log sheets for the year.

Confirmation of sales for MDI application

As requested by our TOR, all sales of CFCs in 2009 were summarized by the company, including amount purchased, name and address of the purchasers, date and serial number of the invoice and delivering record. There are fifteen customers, including five domestic dealers (not the MDI manufacturers themselves), one exporter to Russia for their MDI uses and nine domestic MDI manufacturers that purchased CFCs from Juhua in 2009. Starting from July 1, 2009 Juhua sold

only directly to MDI manufacturers and not to any dealers. The CFC Production Verification Team checked and confirmed all the sale data to the above-mentioned dealers and MDI manufacturers are complete and correct.

The concerning documents with respect to the export of CFCs for MDI uses of Russian Federation were, including the approval documents for CFC import issued by the Russian Government, the approval documents for CFC export issued by Chinese Government, the custom declarations issued by Custom Office of Shanghai, China were reviewed. The Verification Team confirms that total export of CFCs of China in 2009 is within the limit of amount of CFCs approved. The amount of CFCs that passed through the customs of China to Russian destination is deemed as part of total sales of CFCs for MDI uses.

Annex II

VERIFICATION OF CHINA'S PRODUCTION AND CONSUMPTION IN CTC – TECHNICAL ISSUES IDENTIFIED BY THE SECRETARIAT

Verification of CTC production in China

1. The production verification was carried out between January and February 2010 by a team of three consultants, the same team that carried out the verification in the previous year. It consisted of two technical experts and one financial analyst. The report included a technical audit part and a financial audit part.

2. The summary of the technical audit part contained the results of the visits to and investigation of eleven active CTC producers and one CTC residue distiller out of the 19 CTC producers in China. The other producers had closed down and were not visited. No new production had started in 2009. Detailed information can be found in Table 1 of the attached summary report of the production verification report, which lists information on the 19 plants including the name of the plant, the 2009 production quota allocated by MEP, the actual 2009 production verified, comments on the status of the plant (whether closed or in production) and the aggregate data on the total gross production, CTC used as feedstock in the production of non-ODS chemicals, CTC used in new PA applications, and amounts destroyed. The summary also includes data on CTC used as feedstock, and a list of new process applications including those which were covered in decision XIX/15 of the Nineteenth Meeting of the Parties and those newly identified by MEP.

3. The verification exercise collected from each of the plants the following information: plant identification; plant history, such as date of construction, number of CTC production lines, capacity, and baseline production for 2001 and production between 2002-2009; and plant activities in 2009 such as any process modification, capacity expansion and new facility construction. It also collected data on the production quota for 2009 allocated by MEP, daily production logs for CTC, methyl chloride, methylene chloride and chloroform product transfer records, daily and monthly CTC inventory, and data on CTC packed for sales from daily transfer records out of the product warehouse. The verification team checked, as a secondary level of information, the consumption of raw materials, chlorine, and organic raw materials like methane, methanol and ethylene from daily shift transfer records and the opening and closing stocks from the monthly production inventory. In addition, the team also calculated the CTC output to raw material consumption ratio and compared it with the theoretical values in order to determine whether or not the values varied within a reasonable range.

4. Since the production of chloromethane products generated a series of other products in addition to CTC, the team also collected information on the production of the co-products methyl chloride, methylene chloride, chloroform and perchloroethylene for a check on material balance. At the same time, the financial analyst of the team reviewed the reliability of the accounting system, invoices of purchases and sales records. The results of the technical audit and the financial audits were then compared for consistency, and on that basis the team drew its conclusion on whether the plant was in compliance with the quota allocated by MEP.

5. The CTC verification team verified the production of each of the eleven producers and one CTC residue distillation plant operating in China during 2009. Because of incomplete data at one plant, Sichuan Honghe, the verification team was unable to arrive at a precise confirmed figure for all twelve plants producing CTC in China in 2009. With precise data from eleven plants and an estimate of CTC produced by Sichuan Honghe the verification team reported that China's production as defined by the Montreal Protocol, i.e. excluding feedstock, was 5,166.02 ODP tonnes (4,696.38 metric tonnes of CTC), which was below the maximum agreed production of 7,341.70 ODP tonnes. The uncertainty of this figure

due to the incomplete verification is 602.97 ODP tonnes (548.15 metric tonnes), leading to a possible maximum consumption of 5,768.99 ODP tonnes (5,244.54 metric tonnes); this value is still well below the agreed National maximum production.

6. Upon request by the Secretariat, the World Bank provided a number of additional clarifications. From the verification report in combination with the additional information the following picture emerges: Sichuan Honghe operates two plants, one owned by its parent company Zigong Honghe, situated adjacent to each other. The total combined design capacity of the two CM plants is 100,000 metric tonnes of chloro-methanes. The technical verification was based on the CTC production in the two plants operated by Sichuan Honghe, while the financial verification on the two CM plants was based on their separate financial records. The verification showed that a mix of CTC and chloroform was produced and fed as feedstock into the perchloroethylene plant operated by Zigong Honghe on site. Starting in 2009 at an unknown date the company discontinued to isolate CTC as an accurately measured product, but produced a mixture of CTC and chloroform, which goes directly as feedstock to the PCE plant. The composition is allegedly measured, but only data for two months could be produced; it became clear from that data that the composition varies widely. The company uses a value of 80 per cent of CTC in the mixture as a basis for reporting, but while this value is plausible, there is no supporting evidence that it is actually correct; consequently, the exact produced amount of CTC remains unknown. Since the produced mixture is used as feedstock, there is no way of determining the quantities in lieu of exact records. In addition, in a number of cases the transfer slips for transactions within the company were missing, not allowing quantification of the chemical balance.

7. The Secretariat has requested the World Bank to provide information regarding the worst case scenario, i.e. the maximum CTC production which could have happened. The Bank reported the difference as an increase of 548.15 metric tonnes or 602.97 ODP tonnes. While it remains unclear whether the resulting figures for production are correct or not, the verification allows to state that this is the maximum deviation possible, and therefore allows assessing whether China is in compliance with the agreement. According to the information presented, China is in compliance.

8. The verification report provided a summary of the verification carried out at each plant. It included the verification of: the CTC production, stocks and sales; supply and consumption of chlorine; supply and consumption of methane, methanol, and ethylene depending on the technology applied in the plant; a presentation of the results in tabular form of the production of CTC, co-produced chloromethane products, the raw material consumption and the ratios. The verification of each plant concluded with a comparison of results from the technical and financial audits and discussed the reasons, if any discrepancies were found. The report finally presented the findings on the CTC production level, raw material consumption and ratio, and number of operating days.

9. The verification team reported that the total CTC production including production for feedstock uses was 55,676.307 metric tonnes in 2009 (61,243.68 ODP tonnes) if the uncertainty of 548.15 metric tonnes (602.97 ODP tonnes) because of the incomplete verification of Sichuan Honghe is taken into account. However 49,639.90 metric tonnes (54,603.89 ODP tonnes) were reported by MEP as being used as a feedstock in the production of non-ODS chemicals; to this number, an amount of smaller or equal to 548.15 metric tonnes (602.97 ODP tonnes) has to be added for consistency to allow for the incomplete verification of Sichuan Honghe. Consequently, the calculated figure for the production as defined in the Montreal Protocol remains unchanged.

10. As part of the approval of the final tranche during the 57th Meeting, the World Bank was also requested by the Executive Committee to "provide, as part of their verification of the 2009 CTC production, information on management, treatment and monitoring of CTC containing residue in order to prevent CTC in the residue being released to the environment. The verification report provides the

related information as requested, and Table 3 of the attached summary report contains the summary of CTC residue information for 2009, provided on a plant basis.

11. Table 4 in the summary of the 2009 CTC production verification report presents a list of 26 feedstock uses of CTC in the production of non-ODS chemicals, which was provided by MEP with details on the applications and the purchase of CTC in 2009. No CTC was reported as having been destroyed.

12. In addition, a total of 791.6 metric tonnes of CTC were reported by MEP as being used in new process agent applications listed in decision XIX/15 of the Nineteenth Meeting of the Parties and those newly identified by MEP. Table 5 in the summary report also provides information on the numbering of the applications from decision XIX/15 where applicable, the name of the application, and amount of CTC purchased in 2009.

Verification of the consumption of CTC and CFC-113 as a process agent under Phase I in 2009

13. The verification of the consumption of CTC and CFC-113 was carried out in January 2010 by a team of two, a technical expert and a financial analyst. There was no consumption of CFC-113 in 2009[1]. From Phase I of the sector plan, there are only three plants which are still producing and using CTC as a process agent, while the other plants had either closed or converted to a non-ODS process. These three plants are:

Company name	Process agent application
Jilin Chemical Industrial Co., Ltd.	Chlorosulphonated polyethylene (CSM)
Jiangsu Fasten Fine Chemical Co. Ltd.	Chlorinated Rubber (CR)
Shanghai Chlor Alkali	Chlorinated Rubber (CR)

14. The team verified the consumption of CTC at each of the three plants. The verification began by reviewing the plant history, including date of construction, number of production lines for each CTC application, and their capacities. There was also a discussion on the changes in the plants in 2009, in particular those related to the project activities. The team then examined as primary data the following:

(a) CTC consumption quotas received from MEP for 2009;

(b) CTC purchase orders and daily movement records (from outside to plant warehouse, and from plant warehouse to bulk storage on site);

(c) CTC inventory, including the amount of CTC that remained in the plant warehouse and in production system; and

(d) Monthly CTC consumption which was calculated as: CTC opening stock plus CTC purchase minus CTC closing stock.

15. The team also collected as supporting data secondary information on packaging and movement records of CR, and CSM from the production line to the product warehouse; dispatching and movement records of CR and CSM out of the product warehouse for sales; inventory records of CR and CSM stocks; the number of operating days; and CTC/CR and CTC/CSM consumption ratios.

[1] There has been no obligation to verify zero consumption in 2009, since it was agreed previously that two consecutive verified years which had showed production and consumption of 0 ODP tonnes would remove the obligation for further verification. According to previous reports, all of the CFC-113 users had moved to non-ODS technology and the CFC-113 production facility at Jiangsu Changshu 3F was confirmed by the CFC production verification team as closed and dismantled in 2005.

16. The report provides a summary on each of the enterprises visited, including a description, the verification carried out and the results. The results contain a presentation of the opening and closing stocks, and procurement of CTC for the year. There is also an assessment of the actual production of the final product of the plant obtained by examining the production and movement of the inventory. The CTC purchased by the plant was treated as part of the national consumption in 2009 and was compared to the quota issued by MEP.

Company name	Process agent application	Consumption in 2009	
Jilin Chemical Industrial Co., Ltd.	CSM	258.40 mt	284.24 ODP tonnes
Jiangsu Fasten Fine Chemical Co. Ltd.	Chlorinated Rubber	100.00 mt	110.00 ODP tonnes
Shanghai Chlor Alkali	Chlorinated Rubber	61.74 mt	67.91 ODP tonnes
Total		**420.14 mt**	**462.15 ODP tonnes**

17. The verification confirmed that the 2009 CTC purchases in the PA sector (Phase I) were as given in the table above. Therefore the verified CTC consumption in 2009 was 462.15 ODP tonnes, which was below the 2009 maximum allowable CTC consumption (493.00 ODP tonnes) in the Agreement for Phase I of the CTC sector plan.

18. The verification provided an update on the struggling CTC emission control project for CSM, which had experienced severe technical problems with imported equipment. In 2009, the CSM facility operated at about 30 per cent capacity by use of the limited CTC procurement quota to meet the market needs, while the CTC emission level was slightly reduced from (on average) a value of 0.31 metric tonnes of CTC per metric tonne of CSM produced in 2008 to a value of 0.26 in 2009. Although values in earlier years had been up to 0.35; even a level of 0.26 remains significantly higher than that desired of 0.06. The reduction from an emission of 0.31 tonnes/tonne to a value of 0.26 already required significant additions to the equipment. To further reduce the use of CTC, an internal project using chloroform-CTC mixture solvent instead of the use of CTC was on the way. Laboratory studies and pilot tests of the substitute technology had been completed in 2009, and trial operations are expected to be carried out in March 2010. If these are successful, the plant intends to dismantle the old line (2,000 metric tonnes per year capacity) and the non-functional CSM/CTC colloid dry-separating system of the already existing new line (3,000 metric tonnes per year capacity). Instead, a new CSM/CTC colloid separating system based on in-house water-stripping technology will be set up to meet the needs of a new line production.

19. Upon request from the Secretariat, the World Bank informed further that Jilin Chemical will continue to produce CSM using its in-house CTC emission control technology after 2009. There are no plans to close down the CSM production. As per the PA I Agreement, CTC consumption after 1 January 2010 will be limited to 200 metric tonnes per year. The existing stock will be used in the future as well. In line with the Agreement with the Executive Committee, Jilin Chemical will be allowed to procure new CTC in 2010 based on quotas to be issued by the Government of China and at the quantity permissible by the Agreement. The Government of China, through MEP and the local environmental protection bureau, will monitor the CSM production and CTC consumption at this facility.

CHINA 2009 CTC PRODUCTION VERIFICATION SUMMARY REPORT

The World Bank's CTC Verification Team
February 13, 2010

I. Executive Summary

The CTC Verification Team, using the World Bank's Terms of Reference (TOR) as guidance, verified the production of each of the eleven producers and one CTC residue distillation plant operating in China during 2009. Because of incomplete data at Sichuan Honghe we were unable to arrive at a precise confirmed figure for all twelve plants producing CTC in China in 2009. With precise data from eleven plants and an estimate of CTC produced by Honghe we report that China's production was **5,166.02 ODP tonnes** (4,696.38 MT of CTC), which was below the ExCom/China agreed amount of **7,341.70 ODP tonnes**. Using the Verification Team's best estimate for the realistic CTC production by Honghe, their reported quantity should be increased by 5% or 110 MT which makes China's 2009 CTC production 5,287.02 ODP tones (4,806.38 MT), but still well under the agreed National amount.(for details see paragraph 11.1on page 33).

Under the 2009 Annual Programs of the CTC/PA I an d CTC/PA II Sector Plans, seven CTC producers received zero production quotas from MEP in 2009 and were only allowed to sell to licensed CTC users or licensed CTC dealers, while the other five CTC producers had to consume CTC production by converting to non-ODS chemicals. Also we noted that the on-line CTC sales application and approval system that started in mid-2007, which requires pre-approval of all CTC sales continue running through the year 2009.

The Verification Team also confirmed that, in 2009 no new CMs producers started production; Lee & Man (CTC 19) a new company started in 2008 with a 40,000 MT CMs unit have completed their plan to achieve 120,00MT using three identical CMs lines. In addition this plant is in the final stages of completing a 50,000MT 4th CMs line that is expandable to 80,000MT and will be operational by year end 2010. This plant contains an additional CTC to chloroform conversion unit to consume all CTC produced by the 4th line.

As mentioned in last year's report Shanghai Chlor-Alkali (CTC 12) stopped production in 2007 and the plant is partially dismantled and no longer able to produce CMs products. Also Wuxi Greenapple (CTC 14) ceased production at the Wuxi site under government action that required all chemical operations be closed by year end 2009 and moved to another site. Neither site was included in the 2010 Mission.

The Verification Team mentioned in last year's report a concern that reporting of CTC residue production and handling is inconsistent and as a result creates a hole in attempts to construct an understandable CTC balance for some plants. We strongly urged that MEP require the individual enterprises to provide more complete data records on their CTC residue production, composition and disposal that would allow the Verification Team in 2010 to obtain a more complete understanding of this activity. In response MEP/FECO

undertook a study to obtain a better understanding of the CTC balance for plants and of how residues are handled in those plants. A noticeable improvement was observed in reporting residue amounts and their disposal method. However we also note that there is a very wide range in CTC content of residues from as low as 10% to upwards of 80%. A concern since the more CTC containing materials are handled the greater the chance for misuse or fugitive emissions. Clearly the PCE technology operated by Sichuan Honghe (CTC 11) and Ningbo Juhua (CTC 17) offer a very efficient way to dispose of CTC residues and reclaim commercial value for the chlorine content.

Excess CTC is being managed primarily by three competing technologies, all of which are effective in converting CTC to useable chlorinated products at high efficiencies; the most frequently used process converts CTC using methanol to methyl chloride, HCl and CO_2. The PCE process used globally to convert all types of chlorinated materials to PCE is used by two companies in China. One Enterprise Lee & Man (CTC 19) uses a unique technology to react CTC with hydrogen to get a high selectivity to chloroform which is returned to the CMs units.

During our verification effort we were also faced with unexplained changes in some enterprises on their methanol and chlorine consumption ratios. We suggested MEP ask enterprises to provide an explanation for any significant variance from their normal or theoretical ratios when they assemble their 2009 data for review by the Verification Team in 2010.We still confront this issue in a few Enterprises which creates holes in our efforts to obtain closure on carbon and chlorine balances.

Table 1 summarizes each plant's verified CTC production. Sales profile (% to various licensed end users) is in Table 2. CTC residue information is presented in Table 3 and each plant's CMs capacity is updated in Table 7. The detailed production, raw material consumption, and financial verification results for each verified producer are presented for the individual plants in the following verification reports, and included in ANNEX I AND ANNEX II to this summary report.

Table 1 Summary of 2009 verified CTC production in China

Sector Plan #	Name of CTC producer	2009 CTC Production Quota, MT	Verified CTC Production in 2009, MT	Comments
CTC 01	Luzhou North Chem. Industries Co., Ltd.	0.00	13.76	20.00 MT sold to licensed CTC uses and dealers in 2009, which reduced CTC beginning inventory of 10.98 MT to the yearend stock of 4.74 MT.
CTC 02	Zhejiang Juhua Fluorochemical Co., Ltd.	0.00	14,210.17	13,462.64 MT sold to licensed CTC uses and dealers. 749.65 MT sent to CFC plant for CFC-11/12 production, 55.57 MT sent to HFC 236-fa production, 11.51 MT inventory losses, CTC inventory was reduced from 1,039.19 MT at beginning of the year to 969.99 MT by year end.
CTC 03	Liaoning Panjing No. 3 Chemical Plant	N/A	N/A	Plant closed in 2001.

Table 1- continued

CTC 04	Chongqing Tianxuan Chemical Co., Ltd.	N/A	N/A	Plant closed in 2008.
CTC 06	Chongqing Tianyuan Chem General Plant	No	836.26	No CTC sales allowed for this plant. 865.56 MT CTC sent to Honghe for converting to PCE in 2009, which reduced CTC stock from 108.61 MT at year beginning to 79.31 MT by end of the year.
CTC 07	Taiyuan Chemical Industrial Co., Ltd.	N/A	N/A	Plant closed in 1998.
CTC 08	Luzhou Xinfu Chemical Industry Co., Ltd.	No	114.26	No CTC sales allowed for this plant. 86.63 MT CTC sent to Honghe for PCE production, which increased 14.38 MT of CTC stock at beginning of the year to 42.01 MT CTC in yearend inventory.
CTC 09	Jiangsu Meilan Chemical Co., Ltd.	0.00	6,743.02	All the produced CTC sent to the CTC conversion unit for CM1 production; no CTC sale was made in 2009.
CTC 10	Guangzhou Hoton Chem (Group) Co., Ltd.	N/A	N/A	Plant closed in 1997.
CTC 11	Sichuan Honghe Fine Chemical Co., Ltd.	0.00	2,192.44	60.00 MT sold to licensed CTC users and dealers. 2,132.40 MT sent to CTC conversion unit for PCE production; CTC stock changed from 0.00 MT at beginning of the year to 0.04 MT by the yearend.
CTC 12	Shanghai Chlor-Alkali Chemical Co., Ltd.	N/A	N/A	The line was shut down and no CMs production in 2009.
CTC 14	Wuxi Greenapple Chemical Co., Ltd.	N/A	N/A	The line was shut down and no CMs production in 2009.
CTC 15	Shandong Jinling Chemical Group Company	0.00	8,977.85	3,977.34 MT sold to licensed CTC users and dealers. 4,999.68 MT sent to CTC conversion unit for converting to methyl chloride, 0.84 MT inventory losses, while CTC inventory was slighted reduced from 0.46 MT at year beginning to 0.45 MT by the year end.
CTC 16	Shandong Dongyue Fluoro-Silicon Material Co., Ltd.	0.00	7,965.31	803.50 MT sold to licensed CTC users and dealers. 7,172.334 MT sent to CTC conversion unit for CM1 production, with CTC beginning inventory reduced from 40.617 MT to 30.093 MT at the year end.
CTC 17	Ningo Juhua Chemical & Science Co., Ltd.	No	6,242.18	No CTC sales allowed for this plant. 10,597.65 MT sent to conversion unit for PCE production, which include 4,314.68 MT CTC purchased from Juhua, with CTC stock inventory reduced from 496.45 MT at year beginning to 455.66 MT by year end.
CTC 18	Shandong Haihua Chemical Co., Ltd.	No	1,547.26	No CTC sales allowed for this plant. All produced CTC sent to conversion unit for producing methyl chloride. No CTC stock at the beginning and by the end of year 2009.
CTC 19	Jiangsu Lee & Man Chemical Company Limited	No	5,671.16	No CTC sales allowed for this plant. 5,671.43 MT sent to conversion unit onsite for converting to chloroform, 3.55 MT sent to the Company Research Institute for lab study uses, which reduced 3.82 MT beginning stock to 0.00 MT by end of the verification year.

Table 1 - continued

CTC Subtotal Production, MT			**54,513.67**	
CTC 05	Chongqing Tiansheng Chemical Co., Ltd.	N/A	N/A	Plant closed in 2005.
CTC 13	Quzhou Jiuzhou Chemical Co., Ltd.	0.00	614.25	631.54 MT sold to licensed end users, including 27.04 MT of CTC beginning inventory reduced to 9.75 MT at year end.
CTC Subtotal by Distillation Plant, MT		**0.00**	**614.25**	
Verified 2009 CTC Total Production in China, MT		**55,127.92**		**Verified by WB**
2009 CTC Uses for non-ODS feedstock, MT		49639.897		Reported by MEP (see Table 4)
2009 CTC Uses for new PA applications, MT		791.64		Reported by MEP (see Table 5)
2009 CTC destroyed by incineration, MT		0.00		Reported by MEP (see Table 6)
2009 CTC Production in China*, MT		**4,696.38**		**5,166.02 ODP tons**
Agreement Limit on China 2009 CTC Production, MT		**6,674.27**		**7,341.70 ODP tons**

* 2009 CTC Production in China = Verified 2009 CTC Total Production – non-ODS feedstock uses - new PA applications – amount destroyed by incineration

Table 2 Verified CTC sales profile in 2009*, MT

Total CTC sales in 2009	To CFC users	To PA users	To Non-ODS feedstock users	To laboratory users	To licensed CTC dealers	Others
19,772.59	749.65	816.98	13,424.69	109.90	4,659.02	12.35
100%	3.79%	4.13%	67.90%	0.56%	23.56%	0.06%

* Data from financially verified results (see Annex II of the verification report). The difference (817.57 MT) between the financial sales (19,772.59 MT) and production verified sale figures (18,955.02 MT) resulted from 1) the 805.22 MT used in plant for CFC and HFC-236-fa production was recognized as financial sales in Zhejiang Juhua and 2) the 12.35 MT other uses (CTC inventory losses) resulted from Zhejiang Juhua (11.51 MT) and in Shandong Jinling (0.84 MT) were also included in financial sales .

Table 3 Summary of CTC residue information for 2009

Name of Producer	MT* CM2	MT* CM3	MT* CTC	MT* Total CMs	Ratio CM3/ CM2	MT Residues	% Resid./ tot.CMs	% Resid/CTC	% CTC/ Tot.CMs
Luzhou North	216	83	13.8	312	0.38	0.18	0.06	1.30	4.41
Zhejiang Juhua	99,279	101,974	14,210	215,463	1.03	795	0.37	5.59	6.60
Chongqing Tianyun	8,778	9,440	836	19,054	1.07	0	0	0	4.39
Luzhou Xinfu	3,767	1,304	114.3	5,186	0.35	<1	0	0	2.20
Jiangsu Meilan	73,321	113,226	6,743	193,290	1.54	185	0.096	2.74	3.49
Sichuan Honghe*	22,511	42,437	2,192	67,192	1.89	0	0	0	3.26
Shandong Dongyue	47,887	98,678	7,965	154,530	2.06	340	0.22	4.27	5.15
Shandong Jinling	119,054	113,256	8,978	241,287	0.95	185	0.077	2.06	3.72
Ningbo Juhua	36,940	35,884	6,242	79,026	0.97	0	0	0	7.90

Shandong Haihua	18,016	18,364	1,547	37,927	1.02	487	1.28	31.50	4.08
Jiangsu Lee & Man	58,973	57,220	5,671	122	0.97	179	0.15	3.15	4.65
Total or Weighted Average		591,866	54,512	1,013,389		2,171			4.86

- **Used rounded figures for this table so slight difference vs. verified data**

The Enterprises, as requested provided data on their operations with respect to CTC residues. Using the reported data, an analysis was made to better understand the variability of CTC residues between the various CMs operations. China CMs producers are using seven different technologies (Russia, Japan, Spain, USA, three Chinese versions), so it would be expected that many different results would occur. In general CTC residues are formed when Chlorinator residence time or temperature is increased, also when the CM3 to CM2 ratio is increased above the typical 1:1 more CTC is formed which can lead to more residue formation. A major surprise is the wide range in tar content of the residue purge from the CTC refining column bottoms, from less than 10% to upwards of 80%. There clearly seems to be a good possibility that several high CTC content purge streams could be concentrated to a much lower CTC content which would reduce the potential for atmospheric admissions from offsite waste treatment or recovery operations. Residues as a % of CTC production for a CM3:CM2 balanced ratio would be in the 2 % range and increase to 4-5% when the CM3:CM2 ratio approaches 2:1. The high residue figures at Zhejiang Juhua and Shandong Haihua occurred due to mis-operation. Those CMs plants that are connected to a PCE operation have the cleanest approach for handling residues as all material fed to a PCE plant is converted to non-ODS PCE.

II. Use of CTC as feedstock for non-ODS production

MEP reported that China consumed **49,639.897 MT** of CTC as feedstock for non-ODS chemical production during the verification year of 2009, as summarized in Table 4. This amount of CTC consumption includes the same CTC feedstock applications listed in last year's report (No. 1-25) and one CTC feedstock application recently identified in China (No. 26). MEP also reported that in 2009 **791.64 MT** of CTC were used in new process agent applications and **0 MT** CTC was destroyed by incineration.

The MEP-reported CTC non-ODS feedstock, new PA uses and the amount of CTC destroyed by incineration in 2009 have been deducted from the overall CTC production verification total (see Table 1). Detailed data information reported and verified by MEP is presented in Tables 4 to 6 below. The Bank's Verification Team did not examine any of MEP's reported data verification during this January/February 2010 mission.

Table 4 Use of CTC for non-ODS feedstock applications in 2009*, MT

No.	Non-ODS feedstock applications	CTC purchase in 2009	Reported by
1	DV methyl ester	1,534.94	MEP
2	2-methyl-3-(trifluoromethyl)aniline	0	MEP
3	HFC-236fa	399.972	MEP

No.	Non-ODS feedstock applications	CTC purchase in 2009	Reported by
4	HFC-245fa	1,499.5	MEP
5	HFC-365mfc	0	MEP
6	DFTFB	0	MEP
7	Flunarizine Hydrochloride	0	MEP
8	Astaxanthin	0	MEP
9	Trifluoromethoxybenzen	0	MEP
10	DPGA	0	MEP
11	Fluorescent bleaching agent intermediate	40.8	MEP
12	Frochloride lubricant	0	MEP
13	Converted to CM1	21,067.784	MEP
14	Benzophenone	3,478.88	MEP
15	Cinnamic acid	1,114.59	MEP
16	Triphenylmethyl chloride	659.98	MEP
17	Tetrachloride dimethylmethane	279.43	MEP
18	Processing of Aluminium, Uranium	113.9	MEP
19	4,4-difluorodiphenyl ketone	0	MEP
20	4-trifluoromethoxybenzenamine	0	MEP
21	1,2-Benzisothiazol-3-Ketone	0	MEP
22	2-methyl-4,5- Difluoro-1-(2,2,2)-trifluorobenzen	26	MEP
23	Converted to CM3	5,674.98	MEP
24	Perchloroethylene（PCE）	13,682.241	MEP
25	PDAO	0	MEP
26	DFAO	66.9	MEP
Subtotal non-ODS feedstock applications in 2007, MT		**49,639.897**	

* Reported by Project Management Office, Ministry of Environmental Protection (MEP) of China, on February 8, 2010.

Table 5 CTC for new PA applications identified in 2009*, MT

No.	Application No. in Decesion XIX/15	New process agent applications	CTC purchase in 2009, MT	Reported by
1	32	Prallethrin/ ES-Prallethrin	56.26	MEP
2	33, 39, 41	O-Nitrobenzaldehyde / MNitrobenzaldehyde/nitro benzyl alcohol	181.26	MEP
3	NA	3-Methyl-2-Thiophenecarboxaldehyde	0	MEP
4	NA	2-Thiophene ethanol	0	MEP
5	NA	3,5-DNBC/triiodoisophthalic	10	MEP
6	NA	1,2-Benzisothiazol-3-Ketone	0	MEP
7	NA	Ticlopidine	15	MEP
8	NA	Chloromethane-sulfoniceaster	0	MEP
9	NA	2-(p-Bromomethylphenyl) propionic acid	40	MEP
10	NA	2-methoxy-3-methylpyrazine	9.9	MEP
11	NA	4-(trifluorometoxy)aniline (TFAM)	2.1	MEP

No.	Application No. in Decesion XIX/15	New process agent applications	CTC purchase in 2009, MT	Reported by
12	NA	4-Bromoanisole	0	MEP
13	NA	4-Bromo-benzenesulfonyl	0	MEP
14	NA	4-Chloro-2-Trichloromethyl pyridine	0	MEP
15	NA	Chloropyrazine	10	MEP
16	NA	Diamino pyrazole sulfate	0	MEP
17	NA	Dichloro-p-cresol	30	MEP
18	NA	Dope	250	MEP
19	NA	Doxofylline	0	MEP
20	NA	Ethyl-4Chloroacetoacetate	106.32	MEP
21	NA	Ozagrel	0	MEP
22	NA	PVDF	0	MEP
23	NA	Single-ester	0	MEP
24	NA	Using as G.I.	0	MEP
25	NA	β-Bromopropionicacid	0	MEP
26	NA	Acrylamide (N-(1,1-dimethyl-3-oxobutyl) (DAAM)	0	MEP
27	NA	2-Methoxybenzoylchloride	20.8	MEP
28	NA	Levofloxacin	60	MEP
29	NA	Fipronil	0	MEP
30	NA	2-chloro-5- (trifluoromethyloxy) pyridine	0	MEP
Subtotal new process agent applications in 2009, MT			**791.64**	

* Reported by Project Management Office, Ministry of Environmental Protection (MEP) of China, on February 8, 2010.

Table 6 CTC destroyed by incineration in 2009*, MT

No.	Disposal of CTC	CTC destroyed by incineration	Reported by
1	Destroyed by incineration	0	MEP
	Subtotal CTC destruction in 2009, MT	**0**	

* Reported by Project Management Office, Ministry of Environmental Protection (MEP) of China, on February 8, 2010.