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EXECUTIVE COMMITTEE OF  
THE MULTILATERAL FUND FOR THE  
IMPLEMENTATION OF THE MONTREAL PROTOCOL  
Fifty-seventh Meeting  
Montreal, 30 March - 3 April 2009

**Addendum**

**PROJECT PROPOSALS: CHINA**

This addendum is issued to submit the following request for the release of funding approved in decision 56/62:

Production

- Sector plan for CFC production phase-out: 2009 annual programme

World Bank

**CFC PRODUCTION PHASE-OUT PROGRAMME:  
2009 ANNUAL PROGRAMME AND VERIFICATION OF THE 2008 ANNUAL WORK  
PROGRAMME**

**PROJECT DESCRIPTION**

**Introduction**

1. According to the Agreement for the China CFC production sector phase-out plan that required the annual programme to be submitted for review at the last meeting of the year preceding the year of the programme, the World Bank submitted the 2009 annual programme for the CFC production sector phase-out plan in China to the 56<sup>th</sup> Meeting in November 2008. Having resolved the issue with respect to post-2009 monitoring of the agreement as per decision 56/13, the Executive Committee decided “to approve the 2009 work programme of the China CFC production closure programme at US \$7.5 million and agency support costs of US \$562,500 for the World Bank, noting that the request for funding and support costs would be submitted by the World Bank to the 57<sup>th</sup> Meeting, together with a verification report on the implementation of the 2008 annual programme” (decision 56/62).

2. Accordingly, the World Bank is submitting to the 57<sup>th</sup> Meeting the verification report on the implementation of the 2008 China CFC production phase-out programme and the request for the release of US \$7.5 million and US \$562,500 for the implementation of the 2009 annual programme. For reasons of economy, only the summary of the verification is attached while the full verification report could be made available to members of the Executive Committee upon request.

**Verification of the 2008 CFC production in China**

3. The verification was conducted during 21-22 February 2009 by a team of three with relevant technical and financial expertise and 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-Chemical Co. Ltd. in Quzhou City, Zhejiang Province. The report contains a summary of conclusions and four annexes. The summary of the conclusions provides the overall assessment of the verification team on the performance of the 2008 work programme in achieving the targets set in the Agreement.

4. The overall assessment of the verification concludes that China complied with the annual CFC production target set out in the Agreement for the year 2008, with the total actual production of CFCs being 547.81 ODP tonnes, or 2.19 ODP tonnes lower than the maximum production allowable for 2008 under the Agreement. There was no CFC-13 production in 2008. The verification report indicated that after the completion of the 2007 production campaign all six plants were closed and the production lines dismantled with key equipment destroyed, except one CFC-11/CFC-12 production line at Zhejiang Juhua Fluoro-chemical Co Ltd (SRI#B14) that has been converted to a swing plant for producing primarily HCFC-22 while producing under license no more than 550 ODP tonnes of CFC-12 in each year 2008 and 2009 for use in MDIs.

5. Annex I starts with a general overview of the Juhua facility that 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 2008 ceased on 22 July 2008. It describes the campaigns of production of CFCs at the Juhua facility. The production of CFC-11 and CFC-12 in 2008 in Juhua was carried out in two campaigns, from 24 March 2008 to 9 April 2008 and from 5 December 2008 to 11 December 2008 for a total of 22 operational days.

6. Annex I also provides information on all sales of CFCs for MDIs in 2008. It is summarized by the company, including amount purchased, name and address of the purchasers, date and serial number of the invoice and delivery record. There are only six customers, including five domestic dealers (not the MDI producers themselves) and one exporter to Russia for its MDI uses. The CFC production verification team checked and confirmed all the data on sales to the above-mentioned dealers are complete and correct.

7. Annex II sets out the results for Juhua facility in the format approved by the Executive Committee and covers data by month on production capacity, product mix, production quota and actual CFC production, feedstock consumption ratio and inventory changes in feedstock, and the number of days of production. Comparative data on these parameters since the beginning of the phase-out programme has been provided to facilitate a check on consistency. It also includes information on the date of termination of production, date of dismantling and evidence of dismantling examined.

8. Annex III contains the verification of sales of CFCs for MDI uses in 2008. It lists the purchases and provides information on CFC-11 and CFC-12 purchases by invoice and delivery record.

9. Annex IV contains the financial audit results 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.

## **SECRETARIAT'S COMMENTS AND RECOMMENDATION**

### **COMMENTS**

#### Overall assessment of the 2008 verification in light of the guidelines for verification of ODS production phase-out

10. The verification of the implementation of the 2008 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 2008.

#### Verification of use for MDIs

11. The verification team attempted to verify that all of the production was for MDIs and approved essential uses only since this is a requirement of the accelerated production phase-out agreement between the Executive Committee and the Government of China. The initial methodology used was to review the sales records of the producer.

12. However, the CFC production verification team indicated that it was not in a position to verify that the 547.81 ODP tonnes of MDI-grade CFCs produced by Juhua was sold to MDI manufacturers but did verify that it was sold to six dealers or stockpiled. The reason that the end-use could not be verified is that 233.37 ODP tonnes of the 547.81 tonnes produced were stockpiled and 321.94 ODP tonnes were sold to dealers and not directly to the MDI manufacturers. According to the verification report, the reason why the CFC producer Juhua did not sell directly to the MDI manufacturers was that the manufacturers would not pay their invoices until the CFC had been checked analytically and were 100 per cent consumed.

13. After the Secretariat raised this issue with the Bank, the Government of China, through the World Bank, subsequently confirmed that it had issued licenses to the dealers for the purchase of 211.94 ODP tonnes for the sole purpose of use in the domestic MDI market through its CFC sales management mechanism and the balance was exported for essential uses. However this had not been verified by the team since the licenses had not been made available to it. The Bank indicated that the Government of China intended to use this methodology for verifying sales of CFCs next year when it submits the last tranche of the agreement. The Executive Committee may wish to request that the verification team to continue to review the producer's sales records and licenses issued for MDI use in both 2008 and 2009 and report back to the Committee to the first meeting in 2010.

14. As allowed under decision 49/30, the 110 ODP tonnes balance of the 321.94 ODP tonnes sold to dealers was exported to the Russian Federation for an approved essential use for MDIs (decision XIX/13 of the 19<sup>th</sup> Meeting of the Parties, Annex A).

#### Stockpiling

15. Of the 547.81 ODP tonnes produced, 233.37 ODP tonnes were stockpiled at the Juhua facility in 2008 according to the verification report. The licenses for the sale of this quantity have not yet been issued, and therefore, the use for MDIs cannot be verified at this time. If used in 2009, this amount can be verified next year, however, there may be an issue next year if the stockpiled amount is not used in 2009 since it is the last year of the agreement.

#### Late submission

16. Although the accelerated phase-out agreement between China and the Executive Committee allows for an independent verification at least 30 days prior to the applicable Executive Committee meeting (UNEP/OzL.Pro/ExCom/44/73, Annex XVII, paragraph 5, condition b), this means that there is very little time for the Secretariat to review the verification report, especially when itself raises outstanding issues, as was the case this year. The resolution of the issue came after the close of business two weeks prior to the current meeting. The document is submitted for the consideration of the Executive Committee in light of the fact that the annual tranche had already been approved. In order to resolve potential issues for the last annual tranche to be submitted in 2010, the Executive Committee may wish to consider urging China to make all efforts to submit the verification as early as possible in 2010.

### **RECOMMENDATIONS**

17. The Secretariat recommends that the Executive Committee:
- (a) Requests the Government of China and the World Bank to include the review of licenses for the sale of CFCs to MDI manufacturers in 2008 and 2009 as part of the verification report to be submitted to the first meeting of 2010;
  - (b) Urges the Government of China and the World Bank to make all efforts to submit the verification report as early as possible in 2010 in order to resolve any potential issues in advance of the dispatch of documents to the Executive Committee; and
  - (c) Releases to the World Bank US \$7.5 million and the associated support cost of US \$562,500 for the implementation of the 2009 work programme of the China CFC production sector agreement, in light of the verification results indicating that China has met the CFC production reduction target as established in the CFC production sector agreement for the year 2008.

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**CHINA CFC PRODUCTION PHASE-OUT PROGRAM**  
**2008 VERIFICATION REPORT**

February 23 2009

**Inspection Team**

F.A. Vogelsberg: Mission Leader and primary text preparation - Annex I  
Hua Zhangxi: Data Summary - Annex II (Gradual Closure and Complete Closure),  
and Annex III (Verification of sales of CFCs for MDI uses in 2008)  
Wu Ning: Financial Verification of CFC Production for China in 2007- Annex IV

**Assisted and Accompanied By**

Lin Nanfeng: (FECO/MEP)

**Inspection Mission Time**

February 21-22 2009

**Enterprises Visited**

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

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**Report Format and Contents**

- ◆ Verification conclusions for CFC Production in China for 2008.
- ◆ Annex I – Report for visit to Juhua Fluoro-chemical Co.Ltd
- ◆ Annex II - CFC production verification tables for gradual closure for the enterprise visited and inspected.
- ◆ Annex III – Verification of CFC sales for MDI uses in 2008
- ◆ Annex IV– Financial verification of CFC Production for China in 2008

## Verification Conclusion with respect to China's CFC Production in 2008

In accordance with the "CFCs/CTC/halon Accelerated Phase-out Plan in China", the maximum allowable CFCs production in 2008 is 550 ODP tonnes, which is specifically assigned for MDI uses. In 2007, based upon the assessment of SEPA (Now MEP) on technical and economic status of all CFC producers, Chinese Government approved that the CFC production line of Zhejiang Juhua Fluoro-chemical Co. Ltd (Juhua, SRI B14) could be retrofitted as the sole plant for production of HCFC-22 or CFC-11/12. In 2008, Chinese Government issued quota for production of 550 ODP tonnes of CFCs to Juhua.

The verified total production of CFCs in China 2008 is 547.81 ODP tonnes, or 2.19 ODP tonnes lower than the maximum allowable CFC production in 2008. The following is the breakdown in accordance with product varieties

Type of CFC product for MDI uses	Total production of CFCs for MDI uses		Stock of CFCs for MDI uses in 2008 (MT)		
	ODS (MT)	ODP (tonnes)	Opening Jan 1, 2008*	Closing Dec 31, 2008	Change
CFC-11	143.000	143.000	0	135.312	+135.312
CFC-12	404.810	404.810	0	90.299	+ 90.299
Total	547.810	547.810			

\* Remark: The original CFC plant was closed in June 2007. Then the plant was retrofitted to a CFC-11/12 & HCFC-22 swing plant. The CFC production of the retrofitted plant started in 2008. It is a new start specifically for producing CFC-11/12 for MDI uses only. Therefore, the opening stocks for both CFC-11 and CFC-12 of 2008 are "0" that differ with the closing stocks of CFCs for general use of June 30, 2007.

CTC consumption for producing 143.000 MT of CFC-11 in 2008 is 170.354 MT. The average CTC/CFC-11 ratio is 1.191 (theoretical 1.12) that is close to the historical normal ratio of Juhua.

CTC consumption for producing 404.810 MT of CFC-12 in 2008 is 595.266 MT. The average CTC/CFC-12 ratio is 1.347 (theoretical 1.272) that is close to the historical normal ratio of Juhua.

HF consumption for producing 143.000 MT of CFC-11 in 2008 is 22.723 MT. The average HF/CFC-11 ratio is 0.159 (theoretical 0.145) that is close to the historical normal ratio of Juhua.

HF consumption for producing 404.810 MT of CFC-12 in 2008 is 145.597 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-11 and CFC-12 in 2008 in Juhua was carried out in two campaigns, from March 24 2008 to April 9 2008 and from December 5 2008 to December 11 2008. Total operational days were 22.

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

All the verified monthly production data and raw material consumption data are recorded in the corresponding Section D2 of Annex II to the Verification Report.

In 2009, 7.5 MT (excluding the loss of 0.188 MT) of MDI grade CFC-11 were sold out and delivered to 3 purchasers and 314.44 MT (excluding the loss of 0.071 MT) of MDI Grade CFC-12 were sold out and delivered to 5 purchasers. The detailed sales information of CFC-11 and CFC-12 for MDI uses in 2008 is recorded in Annex III to the Verification. Report

The financial verification results are described in Annex IV to the Verification Report.

## **ANNEX I**

### **Report for visit to Juhua Fluoro-chemical Co. Ltd**

#### **General Overview**

The CFC11/12 plant shutdown on June 9, 2007, since SEPA (now MEP) had selected Juhua as the most viable operation to produce limited quantities of CFC-11/12 for MDIs' from January 1, 2008 to December 31, 2009 ; the plant was not decommissioned but instead reconfigured to become a "swing" plant capable of CFC-11/12 or HCFC-22 production. Any production of CFCs after January 1, 2010 will require approval by the Parties to the Montreal Protocol. The reconfiguration was done by July 23, 2007 but actual operation producing HCFC-22 did not occur until August 13, 2007, even though the original design was capable of the higher pressure required for HCFC-22. It was necessary to make several process changes including modification to the distillation column's internals to accommodate refining HCFC-22.

The HCFC-22 market become very soft in mid 2008 and the production of HCFC-22 for year 2008 ceased on July 22, 2008.

Two CFC-11/12 campaigns were carried out in 2008. The first campaign was started March 24 at 6 AM and run continuously until shutdown April 9 at midnight; a total of 10 operational days. The second campaign started December 5, 2008 at 8 AM and was terminated December 11 at 9:30 PM; a total of 6 operational days. Therefore, a total of 22 operational days were devoted to CFC production. HCFC-22 was produced for 124 operational days. The plant was essentially down for more than one half of 2008 or 218 days except a few days in August when 46.8 MT of HF was fed to the production system in an attempt to produce HFC-32; however, not ready for commercial production yet.

#### **Verification Procedures**

CTC transferred from the CMs Plant was verified as 715.62 MT by CFC Verification Team as well as by the CTC Verification Team two days before the CFC verification. Transfer slips were generated for each CTC movement to the CFC plant and these were verified as correct.

HF transferred to the CFC-11/12 & HCFC-22 swing plant for all uses (including CFC-11/12, HCFC-22 and test run on HFC-32) were verified. By backing out HF used for HCFC-22 and the HFC-32 test run, we verified the amount used to produce CFC-11/12.

Between the last production in 2007 on June 9 and the first CFC campaign in 2008 starting March 24, CFC-11 and CFC-12 inventories were determined to be 0.188 MT and 0.071 MT less respectively. The plant reported 2008 CFC production incorrectly subtracted these handling losses from 2008 official production as documented by the product transfer slips. Our verification figures added these adjustments back to 2008 production. Therefore, verified CFC-11 and CFC-12 production is 143.0 MT and 404.81 MT respectively, for a total of 547.81 ODP tonnes vs their 550 ODP tonnes quota for MDI uses. CFC production for the two 2008 campaigns were verified by summing the transfer slips.

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

#### **Confirmation of sales to MDI application**

As requested by our TOR all sales of CFCs in 2008 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 only six customers, including five domestic dealers (not the MDI producers themselves) and one exporter to Russia for their MDI uses. The CFC Production Verification Team checked and confirmed all the sale data to the above-mentioned dealers are complete and correct.

The reason Juhua does not sell directly to MDI manufacturers is related to payment terms demanded by the MDI manufacturers, who do not pay their invoices until the CFCs are checked analytically and 100 % consumed. The CFC dealers are willing to accept these extended payment terms.

The CFC Production Verification Team is not in the position to verify that all of Juhua's MDI grade CFCs sold to the dealers was actually used exclusively for MDI production.



