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EXECUTIVE COMMITTEE OF
THE MULTILATERAL FUND FOR THE
IMPLEMENTATION OF THE MONTREAL PROTOCOL
Thirty-third Meeting
Montreal, 28-30 March 2001

PROJECT PROPOSALS: CHINA

This document contains the comments and recommendations of the Fund Secretariat on the following project proposals:

Production

- Verification report on the implementation of 2000 annual work programme for the CFC production phase-out — World Bank

Refrigeration

- Replacement of CFC-11 foaming agent with cyclopentane and CFC-12 refrigerant with HFC-134a in manufacture of domestic refrigerators at Shangling Electric Appliance (Group) Co. Ltd. — World Bank

Solvent

- Report and request for second payment on the implementation of the 2000-2001 annual programme under the China Solvent Sector Plan — UNDP

VERIFICATION REPORT ON THE IMPLEMENTATION OF 2000 ANNUAL WORK PROGRAMME FOR THE CFC PRODUCTION PHASE-OUT IN CHINA

Description

1. The 2001 annual programme for the CFC production sector phaseout in China was submitted by the World Bank and approved by the Executive Committee at its 32nd Meeting in December 2000, "with funding to be considered at the 33rd Meeting of the Executive Committee, pending the submission of the verification report on the implementation of the 2000 annual programme for the CFC production phaseout in China" (Decision 32/62).

2. As requested, the World Bank is submitting to the 33rd Meeting the China CFC Verification Reports which contain the verification of complete closure of 5 plants included in the 2000 annual programme (identified by the SRIC audit report numbers as A4, A9, B3, B7, and B13), and the 1999 production of 10 plants which were producing under the quota system in the 1999 annual programme (identified by the SRIC audit report numbers as A7, A8, A10, A11, A13, B8, B11, B12, B14, and B15). With the verification report, the World Bank requests the release of US $13 million and the associated 9% support cost for the 2001 annual programme.

Comments

3. It might be recalled that the Executive Committee approved at the 32nd Meeting guidelines and a standard format for the verification of ODS production phaseout. That decision was taken in full anticipation of the challenge of verifying the gradual phaseout of ODS production, a modality which has been and will continue to be adopted by nearly all the ODS producing plants in Article 5 countries. Because different from the complete closures where CFC production discontinues and the key equipment is dismantled, partial closures only results in a reduced production level and therefore presents a greater difficulty for monitoring and greater demand for data adequacy.

4. The World Bank informed the Secretariat that verification took place prior to the 32nd Meeting and therefore did not use the format of the new guidelines. However, this results in the following important data missing from the verification report: number of days in production (operational days) for each month, at each plant site, and monthly consumption and procurement data for feedstocks used for the production of the ODS production monitored, (e.g. CTC and AHF for CFC-11 and CFC-12 production). The expert of the Secretariat has confirmed that both the number of days in operation and the consumption of feedstock are essential elements to validate the CFC production level.

5. As in any audit exercise, the process is important to guarantee the results. To that end, the guidelines provide clear and specific steps to be followed both prior to and at the production sites, using the data provided by the enterprise. However the verification report does not have any explanation on whether these steps were followed or the procedure adopted by the verification team is consistent with the guidelines.

6. The guidelines request the verification report to include the verification teams' findings and conclusions on the implementation of ODS production phase-out annual programme, but the

verification report has no findings and conclusions of the verification team. The insight coming from the field is extremely important to decision-makers who do not have the opportunity to conduct on-site assessment.

The content of the verification report and consistency with the terms of the Agreement

(i) Completion of the verification of the 1999 annual work plan

7. According to the 1999 annual work plan, there should have been another two plants which were not producing in 1997 and were reported by the World Bank as closed but these two plants were not included in the two verification reports submitted previously. This was pointed out by the Secretariat both in its comments on the 2001 annual work plan submitted by the World Bank to the 32nd Meeting and, the verification report submitted to the 33rd Meeting.

(ii) Completion of the verification of the 2000 annual work plan

8. According to the 2000 annual work plan, there should have been another 11 plants which were producing under the 2000 quotas, in addition to the 5 complete closures included in the verification report. However, the 2000 production of these 11 plants is not included in the verification report.

9. Since the submission does not contain the complete verification of the implementation results of the 2000 work programme, it calls into question the consistency with the terms of the Agreement which provides " Payments noted in this paragraph (other than the initial tranche for 1999) are conditioned upon completion of the agreed production decreases noted in paragraph a being independently verified and maintained, and China meeting the other requirements of this agreement. For example, payment in 2003 will be conditional on satisfactory verification that China had, at a minimum, sustained its required 2001 reduction through 2002."

10. It is noted that the World Bank is considering to further streamline the process, which hopefully will include co-ordinating the annual work programme with the scheduling of production verification in the light of the requirements of the Agreement.

The 2001 Work Programme Resubmitted

11. The 2001 work programme is resubmitted to the 33rd Meeting exactly the same as the version submitted to the 32nd meeting. It is not clear why this is not updated to provide more update information from the previous version which was prepared in August 2000. For instance on page 9 of the document, para. 17 states that "China has provided a list of the plants producing HCFC-22 in China, attached in Table A.4. The list will be verified in the second half of 2000 as indicated above". The same statement appears in the latest version, without saying whether the verification has taken place and what the results are.

12. It is to be noted that the Secretariat requested when reviewing the 2001 work programme submitted to the 32nd Meeting, that China submit information on the operation and management of the production quota system. However, this information was not provided in the latest submission.

Recommendations

1. The verification report contains reasonably adequate data on the 5 total closures and the World Bank has agreed to the request of the Secretariat to making available the photos/video on the dismantled plants although they have not been received by the Secretariat. The reduction from these 5 plant closures based on the 1999 CFC production (or issued production quota) is 2,270 MT/ODP, which is approximately 50% of the reduction target (4,770 MT/ODP) of the year 2000.

2. As for the 10 partial closures, in view of the fact that the verification report does not contain the essential data to enable the Secretariat to carry out credible validations and that the report does not contain the complete verification of the 2000 annual programme, the Secretariat is not in a position to recommend the release of funding on the basis of the verification report. Therefore the Executive Committee could consider releasing 50% of the requested funding of US $13 million corresponding to the verified reduction from the 5 total closures once the World Bank has made available the evidence of the 5 dismantled plants to the Secretariat and retain the balance till the 34th Meeting pending submission by the World Bank of the following data:

(a) a verification report encompassing the implementation of the full 2000 work programme of the China CFC production phaseout project in compliance with the guidelines approved at the 32nd Meeting;

(b) a consolidated verification report of the implementation of the full 1999 work programme of the China CFC production phaseout project, which should include all the total plant closures in 1999 including Liaoning Chemical Group Chlor-Alkali Plant and Fujian Shaowu Fluorochemical Plant (one CFC-11 production line), and all the partial closures;

(c) information on the operation and management of the quota system in China;

(d) any proposal on a streamlined process to better co-ordinate the annual work programme and the scheduling of the verification exercise in the light of the requirements of the Agreement.

PROJECT EVALUATION SHEET
CHINA

SECTOR: Refrigeration ODS use in sector (1999): 6,300 ODP tonnes

Sub-sector cost-effectiveness thresholds: Domestic US $13.76/kg

Project Titles:

(a) Replacement of CFC-11 foaming agent with cyclopentane and CFC-12 refrigerant with HFC-134a in manufacture of domestic refrigerators at Shangling Electric Appliance (Group) Co. Ltd.

Project Data	**Domestic**
	Shangling
Enterprise consumption (ODP tonnes)	490.50
Project impact (ODP tonnes)	490.50
Project duration (months)	36
Initial amount requested (US $)	3,927,755
Final project cost (US $):	
Incremental capital cost (a)	3,442,500
Contingency cost (b)	344,250
Incremental operating cost (c)	450,619
Total project cost (a+b+c)	4,237,369
Local ownership (%)	97%
Export component (%)	2%
Amount requested (US $)	0
Cost effectiveness (US $/kg.)	6.21
Counterpart funding confirmed?	
National coordinating agency	SEPA
Implementing agency	IBRD

Secretariat's Recommendations	
Amount recommended (US $) Project impact (ODP tonnes) Cost effectiveness (US $/kg) Implementing agency support cost (US $)	
Total cost to Multilateral Fund (US $)	

PROJECT DESCRIPTION

Sector Background

- Latest available total ODS consumption (1999)	67,580.00 ODP tonnes
- Baseline consumption of Annex A Group I substances (CFCs)	57,818.00 ODP tonnes
- Consumption of Annex A Group I substances for the year 1999	42,983 ODP tonnes
- Baseline consumption of CFCs in refrigeration sector	Not available ODP tonnes
- Consumption of CFCs in the domestic refrigeration sector in 1999, including servicing	6,300.00 ODP tonnes
- Funds approved for investment projects in refrigeration sector as of December 2000 (32nd Meeting)	US $150,893,871
- Quantity of CFC to be phased out in investment projects in refrigeration sector as of end of 2000	11,313.00 ODP tonnes

1. Based on data reported by China to the Multilateral Fund Secretariat, the country is in compliance with the CFC freeze. In order to meet the 50% CFC reduction by 2005, an additional 302.45 ODP tonnes of CFC must be phased out.

2. According to information from the Government of China one individual investment project in the domestic refrigeration sector remains to be funded by the Multilateral Fund. The remaining enterprises in the sector are small- and medium-sized. A terminal umbrella project will be prepared and submitted at a later stage.

3. The Executive Committee has approved about US $ 150.9 million for projects to phase out 11,313 ODP tonnes of CFC in the domestic refrigeration sector in China.

Shanghai Shangling Electric Appliance

4. The enterprise, which is 96.52% nationally owned, consumed 409.3 ODP tonnes of CFC-11 and 81.2 ODP tonnes of CFC-12 in the manufacture of 394,976 units of domestic refrigerators in 1999. It has five lines: three refrigerator production lines, one freezer production line (idle for the last two years) and one refrigeration technical servicing line. Existing foaming production equipment consists of 18 high-pressure foam dispensers, which serve foaming jigs and fixtures installed in the cabinet and door production lines. The enterprise is also equipped with assembly, evacuation and refrigerant charging equipment.

5. The proposed project will phase-out 490.5 ODP tonnes of CFC-11 by converting to cyclopentane in foaming operations (in lines 1, 2 and 3) and to HFC-134a in the refrigerant part (in assembly lines 2, 3 and technical servicing line). Assembly Line 1 has been converted to HFC-134a under the project previously approved by the Executive Committee. Shangling will dismantle Line 4 (freezer production) at its own cost after the completion of this project to achieve the complete ODS phase out in all its production lines.

6. The adoption of a new flammable blowing agent requires substantial modification of the existing production process to insure safe working conditions. The proposal requests funding for

modification/replacement of 18 existing high pressure machines, replacement of pre-mixing stations, electrical modification of existing foaming jigs and fixtures, and the installation of gas detection, ventilation and nitrogen supply systems. The cost requested for the conversion of the foam part amounts to US $2,982,500. Conversion to HFC-134a technology requires replacement of refrigerant charging machines, leak detectors and replacement/retrofit of vacuum pumps at a cost of US $709,770. Other costs include technology transfer, trials, training and safety certification. Contingency costs are calculated at the 10%.

7. Incremental operating costs are requested in the amount of US $450,619 for a period of six months reflecting the higher cost of chemicals and an increase in foam density.

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

COMMENTS

1. The Executive Committee has already approved two investment projects to be implemented by the World Bank for the above enterprise:

- Conversion to 50% reduced CFC foam in refrigerator manufacturing at the cost of US $958,000 (approved at the 10th Meeting), and
- Engineering assistance for conversion of refrigerator manufacturing to HFC-134a with rotary compressor at Shanghai Shangling General Refrigerator Factory at a cost of US $1,327,000 (approved at the 13th Meeting).

2. These two project covered conversion of the entire production of the enterprise at that time. Both projects are completed.

3. The Secretariat requested the World Bank to clarify the date of installation of the additional four production lines listed in the current proposal. The Bank advised that, in the period 1993- 1994 while moving the earlier two projects forward, the company was in the process of simultaneously installing new CFC-based production facilities. The approved projects covered only conversion of one production line. The new production capacity was installed after the date of approval but prior to July 1995.

4. Analysis of the project completion report (PCR) for the second project, received only recently by the Secretariat, indicated that funding provided under the project may have been used for other activities as well as conversion of the refrigerant part in Line 1. In view of this, the Secretariat sought clarifications from the World Bank on the scope of the conversion of the refrigerant part funded under the second project.

5. The Secretariat has also analyzed the utilization pattern of the baseline equipment in foaming operations. It appeared that about 60% of foaming equipment have been utilized for production of about 7% of the total output. This raises the issue of the eligibility of funding for the baseline equipment, which is heavily under-utilised.

6. Production data used in the PCR are not consistent with the data applied in the calculation of incremental operating cost (IOC) in the project proposal. Therefore, it was not possible to complete the review of IOC.

7. The World Bank has been requested to provide additional information and clarifications on all the issues raised above.

8. The issues have a direct bearing on the number of equipment items eligible for funding as incremental costs, and on calculation of incremental operating costs. All the issues relating to eligible costs for each item of equipment have been resolved in discussions with the World Bank.

9. The Sub-Committee on Project Review will be advised accordingly on the outcome of discussion of these remaining issues.

PROJECT EVALUATION SHEET
CHINA

SECTOR: Solvent ODS use in sector (1999): 4,286 ODP tonnes

Sub-sector cost-effectiveness thresholds:	CFC-113	US $19.73/kg
	TCA	US $38.50/kg

Project Titles:

(a) Report and request for second payment on the implementation of the 2000-2001 annual programme under the China Solvent Sector Plan

Project Data	**Multiple solvents**
Enterprise consumption (ODP tonnes)	
Project impact (ODP tonnes)	
Project duration (months)	
Initial amount requested (US $)	6,955,000
Final project cost (US $):	
Incremental capital cost (a)	
Contingency cost (b)	
Incremental operating cost (c)	
Total project cost (a+b+c)	
Local ownership (%)	100%
Export component (%)	0%
Amount requested (US $)	0
Cost effectiveness (US $/kg.)	
Counterpart funding confirmed?	
National coordinating agency	
Implementing agency	UNDP

Secretariat's Recommendations	
Amount recommended (US $)	
Project impact (ODP tonnes)	
Cost effectiveness (US $/kg)	
Implementing agency support cost (US $)	
Total cost to Multilateral Fund (US $)	

Report and Request for Second Payment on the Implementation of the 2000-2001 Annual Programme under the China Solvent Sector Plan

Background

1. This evaluation sheet consists of Part A, Secretariat's comments and recommendations and Part B which contains:

(a) Report and request for second payment on the implementation of the 2000-2001 annual programme under the China solvent sector plan.

(b) Solvent sector plan for ODS phase-out in China: Amendment of first implementation programme (July 1, 2000 – December 31, 2001).

PART A

SECRETARIAT'S COMMENTS AND RECOMMENDATIONS

2. UNDP submitted to the 32nd Meeting of the Executive Committee an interim report on the implementation of the 2000-2001 annual programme together with a proposed amendment to the first implementation programme (July 1, 2000 – December 31, 2001).

3. The Executive Committee noted that the interim report indicated that the projected phase-out would not meet one of the phase-out targets stipulated in the agreement, and did not take a decision on any other aspects of UNDP's submission.

4. UNDP advises in its updated, final report that an additional enterprise which consumes about 86 metric tonnes of TCA per year has been identified to participate in the 2001 programme. This would enable the phase-out target for TCA for 2001 stipulated in the agreement to be met. An ODS phase-out contract has been signed.

Amendment to the first implementation programme

5. In the amendment to the first implementation programme, the Government of China proposes to reduce the funding allocated to reduction contracts by US $2 million and to redirect this amount for development and production of two alternative solvents: n-propyl bromide (nPB, which has a small ODP and is currently under investigation by the Scientific Assessment Panel and the TEAP at the request of the Parties), and a non-ODP solvent designated as HT-1.

6. The Executive Committee did not take any decision related to the proposed amendment to the first implementation programme at the 32nd Meeting.

7. China strongly believes that it will still be able to phase-out the level of consumption required to meet the 2001 and 2002 control targets, as stipulated in the Agreement, since China anticipates that the bidding will result in a lower phase-out cost per ODP tonne than previously

budgeted for because use of the new solvent will reduce conversion costs. Therefore, the reduced allocation will still be sufficient to cover the cost of the 2000 and 2001 ODS Reduction Contracts.

8. Prior to the 32nd Meeting, the Secretariat sought information on why a major proposed expenditure of this nature had not been foreshadowed in the original strategy approved in 2000; and an explanation of the proposal to use nPB in the light of Decision X/8 which encourages Parties to take measures actively as appropriate to discourage the production and marketing of new ozone depleting substances.

9. UNDP advised that a cleaning solvent called HEP-2 containing about 70 percent nPB is currently being imported from the USA. Realising the importance of developing alternative solvents locally at a reasonable price, China will support the development and production of this solvent (this solvent has been provided as one of the alternatives to be used in preparing for the bidding for first year phase-out contracts). However, China will also ensure that the decisions of the Parties and the Executive Committee regarding the usage of these alternative solvents will be strictly followed.

10. The Government of China advised UNDP that the solvent HT-1 is an azeotropic mixture of hydrocarbons and hydrofluorocarbons which is zero-ODP and non-toxic, and has been used in the aviation industry in China for several years.

RECOMMENDATION

1. The Executive Committee might wish to consider the request for funding of US $6.955 million for 2001 on the basis of the above comments, taking into account the Committee's views on the proposed amendment to the first implementation programme.

PART B

REPORT AND REQUEST FOR SECOND PAYMENT ON THE IMPLEMENTATION OF THE 2000 – 2001 ANNUAL PROGRAMME UNDER THE CHINA SOLVENT SECTOR PLAN

by
State Environmental Protection Administration (SEPA), China
and
United Nations Development Programme (UNDP)

BACKGROUND

1. At its 30th Meeting held in Montreal 29-31 March 2000, the Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol (Executive Committee), by Decision 30/56, approved the 29 March 2000 "Agreement for ODS Phase out in China's Solvent Sector" on the phase out of ozone-depleting substances (ODS) in China's solvent sector at a total cost of $52 million to the Multilateral Fund (MLF).

2. At the 32nd Executive Committee Meeting, China and UNDP presented the "Interim Report and Request for Second Payment on the Implementation of the 2000 – 2001 Annual Programme Under the China Solvent Sector Plan" (UNEP/OzL.Pro/Executive Committee/32/30/China). The Interim Report indicated that the bidding process of the 2000 ODS reduction contracts had been completed and that contracts were signed to phase out 473.169 tons of CFC-113, 15.6 tons of TCA and 7.6 tons of CTC. With these reduction contracts, the aggregate phase out target in the 2000 – 2001 Annual Programme would be exceeded, but there was a shortfall of 84.6 tons in the phase out of TCA. The Interim Report also included an Amended 2000 – 2001 Annual Programme in which the Government of China proposed to reduce the funding allocated to ODS reduction contracts by US$2 million and redirect this amount to the development and production of alternative solvents.

3. After considering the recommendations of the Sub-Committee on Project Review (UNEP/OzL.Pro/Executive Committee/32/21, para. 96), the Executive Committee "took note of the interim report on the 2000 – 2001 Annual Programme under the China Solvent Sector Plan indicated that the projected phase out would not meet one of the phase out targets stipulated in the Agreement." (UNEP/OzL.Pro/Executive Committee/32/44, para. 79)

ACTION UNDERTAKEN

4. Subsequent to the 32nd Executive Committee Meeting, the Government of China undertook necessary action to make up the shortfall in TCA phase out. The Government of China and UNDP are pleased to report that one more ODS Reduction Contract has been signed on 21 February 2001 with the Chongqing Chuanyi Factory No. 1 in Chongqing City, Southwest

China, to phase out an additional 86 MT of TCA in its cleaning process to meet all the phase out targets stipulated in the 2000 – 2001 Annual Programme.

5. Chongqing Chuanyi Factory No. 1 is a 100% state-owned enterprise with over 30 years history of producing non-ferrous metal and noble metal functional materials. Its main products such as noble/base metal clad strip, temperature-measuring materials, electrical vacuum devices, etc. are widely used in the electronics industry.

2001 FUNDING

6. In approving the Agreement in March 2000, the Executive Committee approved the release of the 2000 funding of $6.75 million to facilitate China's initiation of activities to meet the 2001 reduction target levels as well as work towards achieving future years' reduction targets. The Executive Committee also decided that an additional amount of $6.955 million for the year 2001 would be made available to China, for the period January 2001 through December 2001, upon satisfactory verification that China has finished the bidding process for phase out in 2001.

7. In addition to previous reports presented to the 32nd Executive Committee Meeting, SEPA and UNDP are providing confirmation that China had made up the shortfall and that all phase out targets in the 2000 – 2001 Annual Programme have now been met. This report will facilitate the Executive Committee's review and approval of the release in March 2001 of the 2001 funding in the amount of $6.955 million.

ACTION REQUESTED

8. With confirmation that China has signed additional ODS Reduction Contract to phase out the tonnage of TCA required for China to meet the aggregate as well as the individual ODS solvent phase out targets in the 2000 – 2001 Annual Programme, the Executive Committee is requested to decide and approve the release of the 2001 funding of $6.955 million in March 2001.

CFC Production Phase Out Verification

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Shandong Xinxing)

A. Plant identification

Name of Enterprise	:	Shandong Xinxing Chemical Plant
Plant Ref. Number	:	
Sector Plan #	:	14
SRI #	:	A4
Address of the Plant	:	West of Zhaozhuang West Railway Station, P.C. 277000, Xuechemg City, Shandong Province
Contact person(s) and Functional Title	:	Mr. Yue Guangli, Director
Telephone Number	:	0632-4418273
Fax Number	:	
E-mail Address	:	
Plant Closed	:	Yes

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer SEPA
Date of Plant Visit	:	Sept. 2, 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction:	1987				
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12	1	1,000	140	32	0
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : 1

Date of CFC production ceased : Jan.1998

Date of dismantling completed : Jan. 28, 2000

Verification of destruction of key components by : [Name of certifying body] EPB, Xuecheng City

Reactor tank(s) dismantled and destroyed : Yes

Control and monitoring equipment dismantled and destroyed : Yes

Pipes dismantled and destroyed : Yes

Utilities dismantled and destroyed : No. Not Specified in the Agreement

Evidence of destruction (photos or videos) : Both Available to SEPA and the World Bank

Chance of resuming production : No

Assessment by the verification team to be included in the verification report : Closure Completed

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			110(issued)-62 (sold) = 48
Opening Stock at beginning of year	37	26	4
Production	140	32	0
Sales	151	54	0
Closing stock at end of year	26	4	4

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-12	140	32	0				
HF/CFC-12	0.444	0.443	0				
CTC/CFC-12	1.379	1.518	0				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			0	0			
Feb			0	0			
Mar			0	0			
Apr			0	0			
May			0	0			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0			
Feb			0	0			
Mar			0	0			
Apr			0	0			
May			0	0			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Suzhou Xinye)

A. Plant identification

Name of Enterprise	:	Suzhou Xinye Chemical Co. Ltd.
Plant Ref. No.		
Sector Plan #	:	34
SRI #	:	A7
Address of the Plant	:	Caihong Building, Sanxiang Lu, P.C. 215004, Suzhou City, Jiangsu Province
Contact person(s) and Functional Title	:	Mr. Xu Yuepin, General Manager
Telephone Number	:	0512-8281388
Fax Number	:	0512-8281988
E-mail Address	:	zgsnc@public1.sz.js.cn
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 24 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1993					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	2	7,000	2,532	5,042	7,408
CFC-12					
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			5,809 (issued) + 1599 (purchased) = 7,408
Opening Stock at beginning of year	0	8	912
Production	2,532	5,042	7,408
Sales	2,524	4138	7,858
Closing stock at end of year	8	912	462

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	2,532	5,042	7,408				
HF/CFC-11	0.174	0.177	0.166				
CTC/CFC-11	1.136	1.250	1,214				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC-11/12 production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			1,173	1.210			
Feb			771	1.202			
Mar			1,256	1.223			
Apr			1,426	1.212			
May			0	0.000			
Jun			0	0.000			
Jul			0	0.000			
Aug			430	1.247			
Sept			565	1.220			
Oct			562	1.218			
Nov			622	1.200			
Dec			603	1.214			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			1,173	0.163			
Feb			771	0.165			
Mar			1,256	0.162			
Apr			1,426	0.167			
May			0	0.000			
Jun			0	0.000			
Jul			0	0.000			
Aug			430	0.175			
Sept			565	0.168			
Oct			562	0.168			
Nov			622	0.167			
Dec			603	0.163			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Jiangsu Meilan)

A. Plant identification

Name of Enterprise	:	Jiangsu Meilan Electro-chemical Plant
Plant Ref. No.		
Sector Plan #	:	1
SRI #	:	**A8**
Address of the Plant	:	No. 460, Yangzhou Lu, P.C. 225300
Contact person(s) and Functional Title	:	Mr. Zhu Ji , Chief, Financial Dept./ Mr. Ying Changlin, Chief, CFC Production Dept.
Telephone Number	:	0523-6552276
Fax Number	:	0523-6552323
E-mail Address	:	
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 25 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1994					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	3,000	1,050	2,009	1,766
CFC-12	1	3,000	1,793	1,606	1,866
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF		2,000			
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,337(issued) + 443(purchased)-14(sold)=1,766
Opening Stock at beginning of year	117	123	337
Production	1,050	2,009	1,766
Sales	1,044	1,795	1,828
Closing stock at end of year	123	337	275

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,866 (issued)
Opening Stock at beginning of year	133	201	54
Production	1,793	1,606	1,866
Sales	1,725	1,753	1,819
Closing stock at end of year	201	54	101

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	1,050	2,009	1,766				
HF/CFC-11	0.174	0.181	0.177				
CTC/CFC-11	1.273	1.267	1.270				
CFC-12	1,793	1,606	1,866				
HF/CFC-12	0.377	0.403	0.391				
CTC/CFC-12	1.338	1.368	1.375				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC-11/12 production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			219	1.243			
Apr			128	1.226			
May			0	0.000			
Jun			0	0.000			
Jul			314	1.440			
Aug			186	1.231			
Sept			309	1.233			
Oct			0	0.000			
Nov			317	1.231			
Dec			293	1.270			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			219	0.167			
Apr			128	0.166			
May			0	0.000			
Jun			0	0.000			
Jul			314	0.200			
Aug			186	0.169			
Sept			309	0.169			
Oct			0	0.000			
Nov			317	0.184			
Dec			293	0.170			

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			77	1.373			
Feb			301	1.347			
Mar			183	1.373			
Apr			311	1.341			
May			383	1.364			
Jun			214	1.340			
Jul			148	1.658			
Aug			109	1.331			
Sept			0	0.000			
Oct			0	0.000			
Nov			0	0.000			
Dec			140	1.332			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			77	0.391			
Feb			301	0.385			
Mar			183	0.371			
Apr			311	0.375			
May			383	0.386			
Jun			214	0.387			
Jul			148	0.488			
Aug			109	0.383			
Sept			0	0.000			
Oct			0	0.000			
Nov			0	0.000			
Dec			140	0.389			

CFC Production Phaseout Verification (Including Gradual Closure)
September-October 2000
(Jiangsu Wuxi Hushan)

A. Plant identification

Name of Enterprise	:	Jiangsu Wuxi Hushan Refrigerant Plant
Plant Ref. No.		
Sector Plan #	:	11
SRI #	:	**A9**
Address of the Plant	:	Ximenwai, Yanwan; P.C. 214164 Wuxi City, Jiangsu Province
Contact person(s) and Functional Title	:	Mr. Qin Weizhou, Director
Telephone Number	:	0510-5596275
Fax Number	:	
E-mail Address	:	
Plant Closed	:	Yes

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept.6-7 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1993					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	4,000	1,120	822	560
CFC-12					
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : 1

Date of CFC production ceased : June, 1999

Date of dismantling completed : Mar. 15, 2000

Verification of destruction of key components by : [Name of certifying body]
EPB, Wuxi City

Reactor tank(s) dismantled and destroyed : Yes

Control and monitoring equipment dismantled and destroyed : Yes

Pipes dismantled and destroyed : Yes

Utilities dismantled and destroyed : Yes, with exception of the refrigeration facility. It was dismantled but not destroyed since it was not specified in the Agreement.

Evidence of destruction (photos or videos) : Yes. Available to SEPA and the Bank

Chance of resuming production : No

Assessment by the verification team to be included in the verification report : Closed completely

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,003 (issued) - 443 (sold) = 560
Opening Stock at beginning of year	0	220	0
Production	1,120	822	560
Sales	900	1,042	558
Closing stock at end of year	220	0	2

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	1,120	822	560				
HF/CFC-11	0.177	0.173	0.177				
CTC/CFC-11	1.247	1.210	1.252				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			86	1.254			
Feb			81	1.254			
Mar			108	1.245			
Apr			205	1.252			
May			80	1.258			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			86	0.177			
Feb			81	0.178			
Mar			108	0.176			
Apr			205	0.176			
May			80	1.177			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Jiangsu Changsu 3F)

A. Plant identification

Name of Enterprise	:	Jiangsu Changsu 3F Refrigerant Co. Ltd.
Plant Ref. No.		
Sector Plan #	:	6
SRI #	:	**A !0**
Address of the Plant	:	Fushan, Haiyu Town; P.C. 215522, Changsu City, Jiangsu Province
Contact person(s) and Functional Title	:	Mr. Zhang Pingzhong, General manager
Telephone Number	:	0520-2621108
Fax Number	:	0520-2621243
E-mail Address	:	
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept. 7-8 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1977					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	10,000	10,232	8,380	7,960
CFC-12	1	5,000	2,739	3,452	2,780
CFC-13					
CFC-113	1	4,000	3,858	3,470	3,542
CFC-114/115	1	400	34	8	150
Raw Materials Production**					
HF	2	6,000			
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.
The data are not audited

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : N. A.

Date of CFC production ceased : N. A.

Date of dismantling completed : N. A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			7,960
Opening Stock at beginning of year	511	874	629
Production	10,232	8,380	7,960
Sales	9,869	8,625	8,237
Closing stock at end of year	874	629	352

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			2,799.635
Opening Stock at beginning of year	473	590	514
Production	2,739	3,452	2,780
Sales	2,622	3,528	3,293
Closing stock at end of year	590	514	1

CFC Products (CFC-113, expressed as ODS)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			3,542.71
Opening Stock at beginning of year	212	435	426
Production	3,858	3,470	3,542
Sales	3,635	3,479	3,720
Closing stock at end of year	435	426	248

CFC Products (CFC-115, expressed as ODS)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			150
Opening Stock at beginning of year	0	12	3
Production	34	8	151
Sales	22	17	96
Closing stock at end of year	12	3	58

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC, PCE or CFC 113/CFC, ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	10,232	8,380	7,960				
HF/CFC-11	0.165	0.167	0.160				
CTC/CFC-11	1.191	1.259	1.259				
CFC-12	2,739	3,452	2,780				
HF/CFC-12	0.38	0.409	0.401				
CTC/CFC-12	1.380	1.514	1.403				
CFC-113	3,858	3,470	3,542				
HF/CFC-113	0.480	0.456	0.480				
PCE/CFC-113	1.053	1.041	1.065				
CFC-115	33.6	8	151				
HF/CFC-115	1.122	1.678	1.138				
CFC-113/115	2.383	2.02	1.607				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							
CFC-113							
CFC-115							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			731	1.254			
Feb			622	1.254			
Mar			808	1.255			
Apr			751	1.256			
May			832	1.257			
Jun			860	1.254			
Jul			433	1.257			
Aug			452	1.255			
Sept			674	1.253			
Oct			647	1.224			
Nov			1,003	1.252			
Dec			147	1.251			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			731	0.167			
Feb			622	0.161			
Mar			808	0.163			
Apr			751	0.164			
May			832	0.161			
Jun			860	0.162			
Jul			433	0.160			
Aug			452	0.160			
Sept			674	0.160			
Oct			647	0.160			
Nov			1,003	0.149			
Dec			147	0.163			

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			286	1.399			
Feb			256	1.398			
Mar			361	1.402			
Apr			401	1.397			
May			380	1.424			
Jun			446	1.399			
Jul			225	1.404			
Aug			235	1.400			
Sept			190	1.400			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			286	0.405			
Feb			256	0.400			
Mar			361	0.396			
Apr			401	0.401			
May			380	0.406			
Jun			446	0.405			
Jul			225	0.401			
Aug			235	0.399			
Sept			190	0.400			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-113 Production and PCE Consumption

Month	CFC-113	No. of operating days	CFC-113 Production	PCE/ CFC-113 Ratio	PCE Opening Stock	PCE Procured/ or added to stock	PCE Closing Stock
Jan			250	0.928			
Feb			152	1.076			
Mar			317	1.187			
Apr			284	1.076			
May			270	1.076			
Jun			352	0.979			
Jul			230	1.075			
Aug			294	1.074			
Sept			300	1.076			
Oct			300	1.075			
Nov			353	1.074			
Dec			440	1.077			

CFC-113 Production and HF consumption:

Month	CFC-113	No. of operating days	CFC-113 Production	HF/ CFC-113 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			250	0.482			
Feb			152	0.492			
Mar			317	0.488			
Apr			284	0.489			
May			270	0.488			
Jun			352	0.414			
Jul			230	0.484			
Aug			294	0.485			
Sept			300	0.489			
Oct			300	0.492			
Nov			353	0.488			
Dec			440	0.487			

CFC-115 Production and CFC-113 Consumption

Month	CFC-115	No. of operating days	CFC-115 Production	CFC-113/ CFC-115 Ratio	CFC-113 Opening Stock	CFC-113 Procured/ or added to stock	CFC-113 Closing Stock
Jan			6	1.98			
Feb			6	1.95			
Mar			9	2.06			
Apr			11	1.86			
May			12	1.86			
Jun			12	1.93			
Jul			9	1.94			
Aug			10	2.09			
Sept			18	1.54			
Oct			12	1.63			
Nov			5	1.67			
Dec			41	0.96			

CFC-115 Production and HF consumption:

Month	CFC-115	No. of operating days	CFC-115 Production	HF/ CFC-115 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			6	1.10			
Feb			6	1.18			
Mar			9	1.15			
Apr			11	1.10			
May			12	1.10			
Jun			12	1.12			
Jul			9	1.23			
Aug			10	1.27			
Sept			18	1.16			
Oct			12	1.01			
Nov			5	1.03			
Dec			41	1.16			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Jiangsu Changsu Yudong)

A. Plant identification

Name of Enterprise	:	Jiangsu Changsu Yudong Chemical Plant
Plant Ref. No.		
Sector Plan #	:	24
SRI #	:	**A 11**
Address of the Plant	:	Haiyu Town, Wangshi, Yinbing Lu,
Contact person(s) and Functional Title	:	Mr. Yan Weiliang, Deputy Director
Telephone Number	:	0520-2561256
Fax Number	:	0520-2561808
E-mail Address	:	yonglida@publici.sz.js.cn
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept.8 , 2000
Duration of Visit	:	0.5 day

C. Plant History

Date of construction: 1985					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12					
CFC-13					
CFC-113	2	1,000	681	658	681
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-113 ODS)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			680 (Issued)
Opening Stock at beginning of year	119	48	11
Production	681	658	681
Sales	752	695	677
Closing stock at end of year	48	11	15

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and PCE/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-113	681	658	681				
HF/CFC-113	0.541	0.565	0.504				
PCE/CFC-113	1.537	1.111	1.143				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-113							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-113 Production and PCE Consumption:

Month	CFC-113	No. of operating days	CFC-113 Production	PCE/ CFC-113 Ratio	PCE Opening Stock	PCE Procured/ or added to stock	CTC Closing Stock
Jan			81	1.077			
Feb			25	1.100			
Mar			67	1.098			
Apr			65	1.100			
May			91	1.235			
Jun			71	1.099			
Jul			80	1.350			
Aug			76	1.104			
Sept			111	1.102			
Oct			0	0.000			
Nov			14	1.000			
Dec			0	0.000			

CFC-113 Production and HF consumption:

Month	CFC-113	No. of operating days	CFC-113 Production	HF/ CFC–113 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			81	0.504			
Feb			25	0.510			
Mar			67	0.509			
Apr			65	0.510			
May			91	0.508			
Jun			71	0.510			
Jul			80	0.499			
Aug			76	0.512			
Sept			111	0.511			
Oct			0	0.000			
Nov			14	0.321			
Dec			0	0.000			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Guangdong Xiansheng)

A. Plant identification

Name of Enterprise	:	Guangsheng Chemical Co. Ltd.
Plant Ref. No.		
Sector Plan #	:	36
SRI #	:	**A 13**
Address of the Plant	:	Zhuchun Farm, P.C. 511370, Zengcheng City, Guangdong Province
Contact person(s) and Functional Title	:	Mr. Ouyang Shiming, General Manager
Telephone Number	:	020-82854060
Fax Number	:	020-82852815
E-mail Address	:	
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 18 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1994					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12	1	3,000	1,100	1,834	1,601
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,487(issued)+ 116(purchased) =1,603
Opening Stock at beginning of year	0	0	20
Production	1,100	1,834	1,601
Sales	1,100	1,814	1,621
Closing stock at end of year	0	20	0

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-12	1,100	1,834	1,601				
HF/CFC-12	0.360	0.423	0.410				
CTC/CFC-12	1.390	1.343	1.330				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC-11/12 production and raw material consumption*

CFC Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			292	1.329			
Feb			135	1.333			
Mar			288	1.330			
Apr			287	1.331			
May			166	1.331			
Jun			134	1.336			
Jul			0	0.000			
Aug			147	1.327			
Sept			98	1.327			
Oct			0	0.000			
Nov			0	0.000			
Dec			54	1.330			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			292	0.411			
Feb			135	0.407			
Mar			288	0.410			
Apr			287	0.411			
May			166	0.410			
Jun			134	0.410			
Jul			0	0.000			
Aug			147	0.408			
Sept			98	0.408			
Oct			00	0.000			
Nov			0	0.000			
Dec			54	0.410			

CFC Production Phaseout Verification (Including Gradual Closure)
September-October
(Sichuan Zigong)

A. Plant identification	:	
Name of Enterprise		Sichuan Zigong Refrigerant Plant
Plant Ref. No.		
Sector Plan #	:	15
SRI #	:	B3
Address of the Plant	:	Tang Jia Ba, P.C. 643010, Zigong City, Sichuan Province
Contact person(s) and Functional Title	:	Mr. Dai Dewen, Director
Telephone Number	:	0813-2206117, 2203239
Fax Number	:	
E-mail Address	:	
Plant Closed	:	Yes
B. Verification		
Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept. 3, 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1989					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	1,500	446	287	198
CFC-12	1	1,500	122	0	0
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : 2

Date of CFC production ceased : May, 1999

Date of dismantling completed : Jan. 24, 2000

Verification of destruction of key components by : [Name of certifying body] EPB, Zigong City

Reactor tank(s) dismantled and destroyed : Yes

Control and monitoring equipment dismantled and destroyed : Yes

Pipes dismantled and destroyed : Yes

Utilities dismantled and destroyed : Yes, with exception of the refrigeration facility. It was not specified in the Agreement.; and are used for other production (HCFC 22)

Evidence of destruction (photos or videos) : Yes. Available to SEPA and the Bank

Chance of resuming production : No

Assessment by the verification team to be included in the verification report : Closed completely

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			409 (issued)-209 (sold)=200
Opening Stock at beginning of year	126	140	215
Production	446	287	198
Sales	432	212	272
Closing stock at end of year	140	215	141

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			54 (issued)
Opening Stock at beginning of year	37	57	48
Production	122	0	0
Sales	102	9	0
Closing stock at end of year	57	48	48

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	446	287	198				
HF/CFC-11	0.159	0.163	0.158				
CTC/CFC-11	1.183	1.207	1.197				
CFC-12	122	0	0				
HF/CFC-12	0.421	0	0				
CTC/CFC-12	1.344	0	0				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			0	0			
Feb			0	0			
Mar			0	0			
Apr			128	1.203			
May			70	1.186			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0			
Feb			0	0			
Mar			0	0			
Apr			128	0.156			
May			70	0.157			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

* Tables for CFC-12 omitted, since no production in 1999.

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Rui'an)

A. Plant identification

Name of Enterprise	:	Zhejiang Rui'an Haitian Chemical Co.
Plant Ref. No.		
Sector Plan #	:	33
SRI #	:	B7
Address of the Plant	:	Chengguan Town, Zhongfu Zone P.C. 325200 Rui'an City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Wu Jianguo, General Manager
Telephone Number	:	0577-5600212
Fax Number	:	0577-5600213
E-mail Address	:	
Plant Closed	:	Yes

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept. 4 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1989					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	5,000	1,082	3,025	617
CFC-12					
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : 1

Date of CFC production ceased : May, 1999

Date of dismantling completed : Jan. 17, 2000

Verification of destruction of key components by : [Name of certifying body] EPB, Rui'an City

Reactor tank(s) dismantled and destroyed : Yes

Control and monitoring equipment dismantled and destroyed : Yes

Pipes dismantled and destroyed : Yes

Utilities dismantled and destroyed : Yes, with exception of the refrigeration facility. It was not specified in the Agreement; and is used for other production.

Evidence of destruction (photos or videos) : Yes. Available to SEPA and the Bank

Chance of resuming production : No

Assessment by the verification team to be included in the verification report : Closed completely

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*

(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1122(issued)-505(sold)= 617
Opening Stock at beginning of year	0	58	21
Production	1,082	3,025	617
Sales	1,024	3,062	638
Closing stock at end of year	58	21	0

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	1,024	3,025	617				
HF/CFC-11	0.169	0.172	0.176				
CTC/CFC-11	1.323	1.242	1.207				
CFC-12							
HF/CFC-12							
CTC/CFC-12							

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			150	1.209			
Feb			178	1.201			
Mar			195	1.204			
Apr			94	1.220			
May			0	0			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			150	0.176			
Feb			178	0.179			
Mar			195	0.176			
Apr			94	0.171			
May			0	0			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

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CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Linhai Limin)

A. Plant identification

Name of Enterprise	:	Zhejiang Linhai Limin Chemical Plant
Plant Ref. No.		
Sector Plan #	:	22
SRI #	:	B8
Address of the Plant	:	Linjiang Daqiao Nan'an, P.C.317000, Linhai City Zhejiang Province
Contact person(s) and Functional Title	:	Mr. He Jianming, General Manager
Telephone Number	:	0576-5196392
Fax Number	:	0576-5197058
E-mail Address	:	
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 22, 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1983					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12	2	3,000	1,365	1,658	1,188
CFC-13	1	50	27	26	27
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,189 (issued)
Opening Stock at beginning of year	125	125	151
Production	1,365	1,658	1,188
Sales	1,365	1,632	1,213
Closing stock at end of year	125	151	126

CFC Products (CFC-13)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			27
Opening Stock at beginning of year	0.91	7.91	7.34
Production	27.00	26.40	26.95
Sales	20.00	26.97	31.72
Closing stock at end of year	7.91	7.34	2.57

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-12	1,365	1,658	1,188				
HF/CFC-12	0.418	0.408	0.408				
CTC/CFC-12	1.339	1.346	1.343				
CFC-13	27.00	26.40	26.95				
HF/CFC-13	0.888	1.098	1.073				
CTC/CFC-13	2.843	3.623	3.360				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-12							
CFC-13							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			148	1.336			
Feb			93	1.294			
Mar			106	1.355			
Apr			218	1.311			
May			139	1.349			
Jun			149	1.357			
Jul			154	1.342			
Aug			133	1.415			
Sept			0	0.000			
Oct			0	0.000			
Nov			0	0.000			
Dec			48	1.317			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			148	0.419			
Feb			93	0.406			
Mar			106	0.429			
Apr			218	0.404			
May			139	0.403			
Jun			149	0.413			
Jul			154	0.397			
Aug			133	0.408			
Sept			0	0.000			
Oct			0	0.000			
Nov			0	0.000			
Dec			48	0.389			

CFC-13 Production and CTC consumption:

Month	CFC-13	No. of operating days	CFC-13 Production	CTC/ CFC–13 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			2.75	3.629			
Apr			4.80	3.504			
May			1.66	3.669			
Jun			4.29	30643			
Jul			1.43	3.643			
Aug			0	0.000			
Sept			3.52	3.622			
Oct			4.90	3.457			
Nov			3.60	3.478			
Dec			0	0.000			

CFC-13 Production and HF consumption:

Month	CFC-13	No. of operating days	CFC-13 Production	HF/ CFC–13 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			2.75	1.149			
Apr			4.80	1.081			
May			1.66	1.096			
Jun			4.29	1.107			
Jul			1.43	1.077			
Aug			0	0.000			
Sept			3.52	1.136			
Oct			4.90	0.973			
Nov			3.60	1.022			
Dec			0	0.000			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Chemical Institute)

A. Plant identification

Name of Enterprise	:	Zhejiang Chemical Industry Research Institute
Plant Ref. No.		
Sector Plan #	:	10
SRI #	:	B11
Address of the Plant	:	No. 926, Xixi Lu, P.C. 310023, Hangzhou City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Zhang Jianjun, Deputy Director
Telephone Number	:	0517-5229414
Fax Number	:	0517-5221129
E-mail Address	:	
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 23 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1990					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12					
CFC-13					
CFC-113					
CFC-114/115	1	100	10.6/120.3	20.7/102.2	0/119.98
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*

(Please use one table for each CFC product)

CFC Products (CFC-114)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			11
Opening Stock at beginning of year	7.96	15.25	20.60
Production	10.60	20.70	0
Sales	3.31	15.35	3.08
Closing stock at end of year	15.25	20.60	17.52

CFC Products (CFC-115 expressed as ODS)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			120.00
Opening Stock at beginning of year	3.64	40.27	74.81
Production	120.30	102.20	119.98
Sales	83.67	67.66	145.34
Closing stock at end of year	40.27	74.81	49.45

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CFC -113/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-114	10.60	20.70	0.00				
HF/CFC-114		0.410	0.00				
CFC-113/114		1.200	0.00				
CFC-115	120.30	102.20	119.98				
HF/CFC-115		0.569	0.479				
CFC-113/115		1.549	1.665				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-115 Production and CFC-113 consumption:

Month	CFC-115	No. of operating days	CFC-115 Production	CFC113 /115 Ratio	CFC-113 Opening Stock	CTC-113 Procured/ or added to stock	CFC-113 Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			0	0.000			
Apr			2.97	2.925			
May			2.31	1.240			
Jun			4.95	1.809			
Jul			4.80	2.301			
Aug			7.92	1.331			
Sept			7.92	1.671			
Oct			12.20	2.404			
Nov			6.0	1.074			
Dec			7.76	1.549			

CFC-115 Production and HF consumption:

Month	CFC-115	No. of operating days	CFC-115 Production	HF/ CFC-115 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0.000			
Feb			0	0.000			
Mar			0	0.000			
Apr			2.97	0.695			
May			2.31	0.370			
Jun			4.95	0.498			
Jul			4.80	0.614			
Aug			7.92	0.340			
Sept			7.92	0.473			
Oct			12.20	0.740			
Nov			6.0	0.330			
Dec			7.76	0.479			

* tables for CFC-114 is omitted, since no production in 1999.

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Dongyang)

A. Plant identification

Name of Enterprise	:	Zhejiang Dongyang Chemical Plant
Plant Ref. No.		
Sector Plan #	:	7
SRI #	:	B12
Address of the Plant	:	Wunning Dong Lu, P.C. 322100, Dongyang City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Wang Tian'e, Deputy Director
Telephone Number	:	0759-6623201
Fax Number	:	0759-6632697
E-mail Address	:	zjfcc@public.dy.jhptt.zj.cn
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 21 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1979					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12	1	5,000	2,219	2,751	2,053
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			2,053 (issued)
Opening Stock at beginning of year	259	202	1,120
Production	2,219	2,751	2,053
Sales	2,276	1,833	2,337
Closing stock at end of year	202	1,120	836

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-12	2,219	2,751	2,053				
HF/CFC-12	0.342	0.365	0.367				
CTC/CFC-12	1.325	1.368	1.367				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			271	1.373			
Feb			261	1.371			
Mar			261	1.368			
Apr			280	1.368			
May			266	1.368			
Jun			272	1.359			
Jul			92	1.357			
Aug			102	1.359			
Sept			94	1.375			
Oct			0	0.000			
Nov			0	0.000			
Dec			154	1.367			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			271	0.379			
Feb			261	0.375			
Mar			261	0.365			
Apr			280	0.359			
May			266	0.361			
Jun			272	0.360			
Jul			92	0.359			
Aug			102	0.370			
Sept			94	0.371			
Oct			0	0.000			
Nov			0	0.000			
Dec			154	0.370			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Lanxi)

A. Plant identification

Name of Enterprise	:	Zhejiang Lanxi Refrigerant Plant
Plant Ref. No.		
Sector Plan #	:	8
SRI #	:	B13
Address of the Plant	:	Lanjiang Town, Xiayue Village ; P.C. 321100, Janxi City, Zhejiang Province
Contact person(s) and Functional Title	:	Jiang Weiping, Director, owner
Telephone Number	:	0579-8301065; 8890024
Fax Number	:	
E-mail Address	:	
Plant Closed	:	Yes

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Sept. 5 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1991					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11	1	2,500	1,894	1,996	785
CFC-12					
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF					
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11 lines closed : 1

Date of CFC production ceased : June 1999 :

Date of dismantling completed Jan 17,2000

Verification of destruction of key components by : [Name of certifying body] EPB, Lanxi City

Reactor tank(s) dismantled and destroyed : Yes

Control and monitoring equipment dismantled and destroyed : Yes

Pipes dismantled and destroyed : Yes

Utilities dismantled and destroyed : Yes, with exception of the refrigeration facility, which was dismantled but not destroyed. It was not specified in the Agreement.

Evidence of Destruction (photos or videos) : Yes, Available to SEPA and the Bank

Chance of resuming production : No

Assessment by the verification team to be included in the verification report : Closed completely

2. Plant for gradual closure

Annual CFC-11/12 quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			1,670(issued)-885(sold)= 785
Opening Stock at beginning of year	4	17	24
Production	1,894	1,996	785
Sales	1,881	1,989	727
Closing stock at end of year	17	24	82

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	1,894	1,996	785				
HF/CFC-11	0.164	0.166	0.167				
CTC/CFC-11	1.166	1.180	1.182				
CFC-12							
HF/CFC-12							
CTC/CFC-12							

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							

*Till the year of the verification.

Monthly CFC production and raw material consumption*

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			215	1.183			
Feb			138	1.178			
Mar			207	1.184			
Apr			125	1.177			
May			100	1.185			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC-11 Production and HF consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			215	0.163			
Feb			138	0.165			
Mar			207	0.171			
Apr			125	0.170			
May			100	0.168			
Jun			0	0			
Jul			0	0			
Aug			0	0			
Sept			0	0			
Oct			0	0			
Nov			0	0			
Dec			0	0			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Zhejiang Juhua)

A. Plant identification

Name of Enterprise	:	Zhejiang Juhua Fluoro-chemical Co. Ltd.
Plant Ref. No.		
Sector Plan #	:	3
SRI #	:	B14
Address of the Plant	:	Kecheng Qu, P.C. 324004, Quzhou City, Zhejiang Province
Contact person(s) and Functional Title	:	Mr. Tang Yueming, General Manager
Telephone Number	:	0570-3096798
Fax Number	:	0570-3098687
E-mail Address	:	qzfh@ppp.qzptt.zj.cn
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 20 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1993					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11/12 (combined)	1	4,000/ 8,000	4,339/ 7,760	4,121/ 7,632	3,376/ 6,325
CFC-12					
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF		10,000			
CTC	1	14,000			

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-11)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			3,375
Opening Stock at beginning of year	85	15	419
Production	4,339	4,121	3,376
Sales	4,409	3,717	3,599
Closing stock at end of year	15	419	0

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			6,325 (issued)
Opening Stock at beginning of year	20	2	420
Production	7,760	7,632	6,325
Sales	7,778	7,214	6,741
Closing stock at end of year	2	420	4

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-11	4,339	4,121	3,376				
HF/CFC-11	0.150	0.151	0.150				
CTC/CFC-11	1.151	1.152	1.150				
CFC-12	7,760	7,632	6,325				
HF/CFC-12	0.340	0.341	0.341				
CTC/CFC-12	1.304	1.309	1.304				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC-11/12 production and raw material consumption

CFC-11 Production and CTC consumption:

Month	CFC-11	No. of operating days	CFC-11 Production	CTC/ CFC-11 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			345	1.151			
Feb			314	1.159			
Mar			404	1.146			
Apr			285	1.144			
May			330	1.145			
Jun			318	1.138			
Jul			349	1.138			
Aug			282	1.142			
Sept			253	1.138			
Oct			237	1.143			
Nov			100	1.190			
Dec			159	1.233			

CFC-11 Production and HF consumption

Month	CFC-11	No. of operating days	CFC-11 Production	HF/ CFC–11 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			345	0.151			
Feb			314	0.150			
Mar			404	0.149			
Apr			285	0.151			
May			330	0.148			
Jun			318	0.151			
Jul			349	0.149			
Aug			282	0.149			
Sept			253	0.150			
Oct			237	0.148			
Nov			100	0.160			
Dec			159	0.164			

CFC-12 Production and CTC consumption

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			646	1.307			
Feb			576	1.316			
Mar			700	1.300			
Apr			971	1.305			
May			768	1.301			
Jun			842	1.291			
Jul			634	1.312			
Aug			583	1.297			
Sept			350	1.300			
Oct			110	1.300			
Nov			118	1.364			
Dec			27	1.407			

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CFC-12 Production and HF consumption

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			646	0.341			
Feb			576	0.340			
Mar			700	0.341			
Apr			971	0.341			
May			768	0.341			
Jun			842	0.341			
Jul			634	0.341			
Aug			583	0.340			
Sept			350	0.343			
Oct			110	0.345			
Nov			118	0.356			
Dec			27	0.370			

CFC Production Phase Out Verification (Including Gradual Closure)
September-October 2000
(Fujian Shaowu)

A. Plant identification

Name of Enterprise	:	Fujian Shaowu Fluoro-chemical Plan
Plant Ref. No.		
Sector Plan #	:	29
SRI #	:	B 15
Address of the Plant	:	No. 18 Xing'an Lu, Siakou, P.C. 354001, Shao Wu, Fujian Province
Contact person(s) and Functional Title	:	Mr. Xu Ping, Deputy Director, Mr. Wang Shenghe, Admistrative Office Chief
Telephone Number	:	0599-6655503
Fax Number	:	0599-6655091
E-mail Address	:	SWFHGC@public.nppee.fj.cn
Plant Closed	:	No

B. Verification

Team Composition	:	3
Leader	:	1
Name	:	F.A. Vogelsberg
Functional Title	:	Consultant, The World Bank
Member(s)	:	2
Name	:	Hua Zhangxi/ Li Zhou
Functional Title	:	Local Consultant, The World Bank/ Project Officer, SEPA
Date of Plant Visit	:	Oct. 17 , 2000
Duration of Visit	:	1 day

C. Plant History

Date of construction: 1989					
ODS Products	No. of Lines	Capacity in Baseline Year*	Production**		
			Baseline Year*	Year 1 1998	Year 2 1999
CFC-11					
CFC-12	1	3,500	1,159	1,170	979
CFC-13					
CFC-113					
CFC-114/115					
Raw Materials Production**					
HF	1	3,000			
CTC					

*The year from which data is used for approving the ODS production phase out project.
**Till the year prior to the verification.
***This applies to plants where production of either HF or CTC or both is integrated.

D. Plant Activity in the Year Verified

1. Plant for Complete Closure

No. of CFC-11/12 lines closed : No.

Date of CFC production ceased : N.A.

Date of dismantling completed : N.A.

Verification of destruction of key components by : [Name of certifying body] N. A.

Reactor tank(s) dismantled and destroyed : N. A.

Control and monitoring equipment dismantled and destroyed : N. A.

Pipes dismantled and destroyed : N. A.

Utilities dismantled and destroyed : N. A.

Evidence of destruction (photos or videos) : N. A.

Chance of resuming production : N. A.

Assessment by the verification team to be included in the verification report : N. A.

2. Plant for gradual closure

Annual CFC quotas, production, sales and stocks since the baseline year*
(Please use one table for each CFC product)

CFC Products (CFC-12)	Baseline Year*	Year 1 1998	Year 2** 1999
Quota			
Opening Stock at beginning of year	136	103	140
Production	1,159	1,170	979
Sales	1,192	865	940
Closing stock at end of year	103	140	178

*The year from which data is used to approve the ODS production phase out project.
**Till the year of the verification

Annual HF/CFC and CTC/CFC ratios

Ratio	Baseline Year	Year 1 1998	Year 2 1999	Year 3	Year 4	Year 5	Year 6*
CFC-12	1,159	1,170	979				
HF/CFC-12	0.380	0.367	0.369				
CTC/CFC-12	1.371	1.339	1.346				

* Till the year of the verification

Operational days per year

Type of Production	Baseline Year	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6*
CFC-11							
CFC-12							

*Till the year of the verification.

Monthly CFC-11/12 production and raw material consumption*

CFC-12 Production and CTC consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	CTC/ CFC-12 Ratio	CTC Opening Stock	CTC Procured/ or added to stock	CTC Closing Stock
Jan			0	0			
Feb			92	1.353			
Mar			255	1.358			
Apr			120	1.344			
May			110	1.335			
Jun			114	1.336			
Jul			106	1.333			
Aug			0	0			
Sept			75	1.351			
Oct			0	0			
Nov			78	1.356			
Dec			29	1.310			

CFC-12 Production and HF consumption:

Month	CFC-12	No. of operating days	CFC-12 Production	HF/ CFC–12 Ratio	HF Opening Stock	HF Procured/ or added to stock	HF Closing Stock
Jan			0	0			
Feb			92	0.365			
Mar			255	0.369			
Apr			120	0.371			
May			110	0.358			
Jun			114	0.370			
Jul			106	0.370			
Aug			0	0			
Sept			75	0.376			
Oct			0	0			
Nov			78	0.376			
Dec			29	0.379			

THE CFC PRODUCTION SECTOR

CHINA

2001 ANNUAL PROGRAM

SEPTEMBER 12, 2000

TABLE OF CONTENTS

Introduction

1. In accordance with the Executive Committee's approval of "The Sector Plan for CFC Production Phaseout in China (Closure Part)" (UNEP/Ozl.Pro/ExCom/27/45/Corr.2), China is hereby requesting release of the **third tranche** of **US$13 million** for the implementation of the 2001 Annual Program. With this funding, China's CFC production will be reduced to a **maximum of 36,200 MT** by the end of 2001, and China will need to phase out an additional 3,798 MT in ODP terms during the year compared to the 2000 quota. Details of the 2001 annual program are provided in Section B.

2. Following the approval of the China CFC Production Sector Plan at the 27th Meeting of the ExCom in March 1999 and the release of funds for the first (1999) Annual Program, China has implemented the phaseout project according to the agreed phaseout plan. Since the start of the program, China has developed supporting policies and regulations. At the beginning of the program, there were 37 CFC production plants in China; the number has been reduced to 10 producers in 2000, CFC production has been reduced from 50,351 MT in 1997 to 44,768 MT in 1999 in terms of ODP, which is lower than the annual requirement, and will not exceed 39,998 MT in 2000.

3. Fourteen technical assistance activities have been started, including activities to strengthen the implementation capacity and conversion capacity of closure enterprises, and preparation of standards to ensure quality and reliability of CFC substitutes.

4. The detailed implementation status of the 1999 and 2000 Annual Programs is described in Section A.

5. ***China's CFC phaseout obligations.*** Within the Sector Plan, China agreed to the following phaseout schedule for CFCs in Annex A and Annex B in Group I.

CFC Production Phaseout Schedule and Annual Grant

	Agreed schedule [1/]		Planned			
Year	Phaseout Amount in the year	Maximum production in the year	Phaseout Amount in the year	Maximum planned production [2/]	Actual Production[3/]	Annual grant funding
	(Metric Tons, ODP)					*(US$ million)*
1999	5,420	44,931	5,498	44,853	44,768	20
2000	4,931	40,000	4,855	39,998		13
2001	3,800	36,200				13
2002	3,300	32,900				13
2003	2,900	30,000				13
2004	4,700	25,300				13
2005	6,550	18,750				13
2006	5,250	13,500				13
2007	3,900	9,600				13
2008	2,200	7,400				13
2009	4,200	3,200				13
2010	3,200	0				0[4/]
						150

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

1/ As provided in the agreement.

2/ The sum of quotas issued in the year to the enterprises remaining in production.

3/ Actual total production by the remaining enterprises.

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

PART A

IMPLEMENTATION STATUS OF PREVIOUS YEARS' ANNUAL PROGRAMS

As of August, 2000

Phaseout Target

6. Starting with a baseline production of 50,351 MT in 1997, the phaseout target for 1999 was to reduce CFC production to **44,931 MT**, measured in ODP; following the completion of the bidding process, quotas for only **44,853 MT** were issued to the remaining CFC plants. Actual audited production for 1999, according to an audit carried out by the China National Audit office in June 1999, was verified as **44,768 MT** (See Table A.2). The phaseout target for 2000 was to further reduce CFC production to **40,000 ODP MT**. Following the completion of the bidding process, quotas were only issued for **39,998 MT** to the remaining 10 CFC plants. Actual targeted production phaseout for the year 2000 was therefore **4,855 MT** compared to 1999 quota.

Enterprise Phaseout Activities

7. Details regarding the enterprise phaseout activities in the 1999 and 2000 Annual Programs are provided in Table A1. The impact of closures is summarized as follows:

Date of contracts	No. of lines closed	Enterprises closed	Capacity closed (MT)	Enterprises remaining
No. of enterprises at start of program (36 in Sector Plan, 1 identified later)**:**				37
Plant closures in the 1999 Annual Program				
1. April & May 1999	17	14 (all complete closures)	22,630	23
2. April & May 1999	3	1 (2 enterprises closed one line each, and the 3rd enterprise was completely closed)	4,000	22
		Total	26,630	
3. June 99	8	7 (all complete closures)	23,800	15
Closures under 2000 Annual Program				
December 1999 to March 2000	5	5 (complete closures); a sixth enterprise has accepted a reduction of quota.	15,500	10

8. Three sets of closures were carried out under the 1999 Annual Program.

a) Under the production sector agreement, China committed to close and dismantle production facilities at 14 enterprises that had not been in production in 1997 (one of these lines did, however, produce some CFCs in the early part of 1999, prior to the agreement). Between April 22 and May 12, SEPA signed closure contracts with these 14 enterprises listed in the approval conditions for the CFC Production Sector Phaseout Plan. The reduction of production capacity resulting from the closure of these 14 enterprises totaled 22,630 MT (Table A1, Part 1).

b) Contracts were also signed with 3 other enterprises for closing down production lines that had no production in 1997. The reduction of production capacity resulting from the closures of these three lines totaled 4,000 MT (Table A1, Part 2). The total production capacity dismantled through these permanent closures was 26,630 MT . In accordance with the Agreement for the CFC Production Sector, all production lines and plant facilities had been dismantled and their primary CFC production equipment destroyed by the end of June 1999.

c) As a result of the quota regulation and bidding for 1999 quotas (see below), contracts were signed in June 1999 with 7 enterprises to phase out production capacity of 23,800 MT (Table A1, Part 3). All the enterprises have completed dismantling of their facilities; the production lines at each location have been verified by a World Bank team that visited the sites and confirmed that these facilities are no longer capable of producing CFCs and their primary production equipment has been fully dismantled.

9. Under the 2000 Annual Program, as a result of the quota regulation and bidding, contracts were signed in December 1999 with 6 enterprises, of which 5 enterprises were to close and dismantle production facilities and one enterprise was to accept a reduction in quota, so as to enable a phase out of production capacity totaling 15,550 MT in 2000 (Table A1, Part 4). By the end of March, 2000, all the closing production lines and plant facilities had been dismantled and their primary CFC production equipment had been destroyed in accordance with the Agreement for the CFC Production Sector. These production lines were visited by a World Bank team in early September,2000 to confirm that they are no longer capable of producing CFCs and their primary production equipment has been fully dismantled. The enterprise accepting a reduction in quota will be verified in 2001.

10. CFC production for 1999 was audited by the China National Audit office, and has been verified at 44,768.12 MT in ODP terms; details are at Table A.2. In year 2000, production recorded up to June 30, 2000 totalled 20,978 MT of ODP. Details are provided in Table A.3.

Implementation of Policy Instruments

11. *Key instrument.* The key policy instrument of the program is the regulation promulgated for the introduction and implementation of an annual tradable quota system, entitled "Circular on Implementing the Quota System for CFC Production", by the State Environmental Protection Administration (SEPA) and the State Administration of Petroleum and Chemical Industry (SAPCI) on May 31, 1999. A bidding system was also introduced together with the promulgation of the tradable production quota. Under this regulation, seven CFC producers were awarded grants through bidding in 1999 to reduce production of 5,498 ODP MT , and a national CFC production quota of 44,853 MT was issued to the 15 remaining CFC producers in order to ensure that the national production for the year did not exceed the agreed target. Similarly, for 2000, five CFC producers were awarded grants to stop production, and one CFC producer accepted a reduction in production quota, for a total phaseout of 4,855 ODP MT ; overall, a national CFC production quota of 39,998 MT was issued in February to the 10 remaining CFC producers in order to ensure that the national production for the year does not exceed the agreed target.

12. *Other instruments relate to trade in CFCs*. A study on options for export/import management for halons and CFCs, which would help China to monitor trade in CFCs and prevent illegal CFC trade, was completed in July 1999. A "Circular on Control Mechanism of Import and Export of ODS" was promulgated on December 3, 1999. The mechanism is implemented by Management Office of ODS Import-Export Control jointly administered by SEPA, the General Administration of Customs (GAC), and the Ministry of Foreign Trade and Economic Cooperation (MFTEC), and helps China to monitor trade in ODS and eliminate illegal ODS trade. An *Export/Import Control List of ODS in China* was promulgated in January 2000. Imports of Carbon Tetrachloride, a key feedstock for CFCs production, were banned on April 1, 2000, and imports of CFCs are regulated by a permit system administered by the MFTEC.

Technical Assistance Activities

13. Sixteen technical assistance activities have so far been identified under the first two annual programs, and fourteen have either been completed or are underway.

14. The 1999 Annual program originally had ten technical assistance activities . One TA project, *ODS* export*/import management and monitoring study* that was originally included in the 1999 annual program was cancelled because its objectives were covered under a similar study conducted under the Halon Sector Phaseout Program. Instead, another project, a *survey on the ODS application as chemical process agents in China*, was added to the 1999 annual program. Some activities have already been completed and the rest are being conducted. All are expected to be completed within two calendar years. Similarly, there were five technical assistance activities taken up in the original and approved 2000 Annual Program, and a new workshop for customs staff is being added . All the TA activities have started and all are expected to be completed within two calendar years.

15. The status of the 1999 technical assistance activities as of July 2000:

a) Production of an ODS phaseout video. An ODS Phaseout video was prepared and broadcast for public information during the 11th meeting of the Parties in Beijing in November 1999. The video, as well as six TV advertisements prepared under the activity, have been broadcast on national TV to raise awareness of the general public and authorities in China concerning the necessity for ODS phaseout and the urgency of phaseout activities. All activities have been completed.

b) Development of a Management Information System (MIS). An MIS has been established and is now in place, and has been used to generate the final 1999 production data and program progress reports. Modifications will be made to the MIS continuously over the implementation of the program to reflect the changing requirements of the program.

c) Development of a substitute strategy. TORs were agreed with the World Bank in January 2000. After a bidding process, a contract was signed in June 2000, and the study is under way. It is expected to be completed in June 2001.

d) Formulation of Standards for Cyclopentane, HCFC 141b, and HFC 134a. A TOR was agreed with the World Bank and a contract was signed in April, 2000;

preliminary sampling of HCFC-141b and HFC-134a has been completed for testing, and preliminary content and parameters of the standards have been confirmed with the Government's administrative unit for standards. This TA is expected to be completed by the end of 2001.

e) Evaluation of bids for a feasibility study for setting up of a HFC 134a production facility. Funding was provided to an evaluation of four proposals bidding to win the opportunity to undertake a feasibility study for the construction of a HFC 134a production facility. Bid evaluation was finalized and a winner was selected. The feasibility study and evaluation of the feasibility study are expected to be completed within 2000.

f) Training of personnel involved in phaseout activities. Two training workshops were conducted in 1999 for CFC producers, local Environmental Protection Bureaus and local Chemical Industry Bureaus. Moreover, an audit training workshop was conducted in April 2000. All activities under this TA have been completed.

g) Initial desk review of the consumption of ODS in the Chemical Process Agents Application sector in China. This review was carried out in January, 2000 and the Report of Preliminary Survey on the ODS Application as Chemical Process Agents in China has been used as the basis for preparations on the project preparation request for the Process Agent Sector Phaseout Plan in China.

h) Market prospects for closure enterprises. This TA activity has been completed. Nine enterprises submitted applications and eight were funded. The first disbursement was made to enterprises in February 2000, and all enterprises submitted their completion reports to the sector team by May 2000. A report of the project activities was submitted to the World Bank on June 5, 2000, reporting on the generally useful results of this experience.

i) National Workshop on substitute development. This workshop was conducted on June 7, 8 and 9, 2000. 35 representatives from 30 CFC enterprises attended the workshop, and 11 experts from four domestic famous research institutes and universities made presentations at the conference. The experts introduced research topics relating to nine categories of CFC substitutes, fine fluorine chemicals, electrical fluorinated chemicals, electronic pure chemical reagents, special fluorine-containing drugs and agrochemicals (herbicide, insecticide etc.); production of these chemicals, and their potential market prospects. Many enterprises expressed an interest in seeking assistance and collaboration from these institutes and universities.

j) Recruitment of International Technical Consultants. No technical consultants were recruited internationally for TA activities in 1999.

16. The status of the 2000 technical assistance activities as of July 2000:

a) Formulation for standards for HFC-152a, and isobutane. Draft TORs were agreed with the World Bank in August 2000.

b) Training of personnel involved in implementation of phaseout activities (including performance audit training). A TOR was submitted to the World Bank on April 25, 2000, and agreement was reached in early August 2000. Training activities for production quota bidding, for local Environmental Protection Bureaus, Petroleum Chemical Industrial Bureaus or relevant institution and auditors, are scheduled to be conducted in September, November and December 2000. A workshop for Customs staff will be added Training activities will be conducted in Dec. 2000.

c) Studies of market prospects for closure enterprises. Based on the generally successful experience of this activity in 1999, a similar TOR enabling such studies for both closure and production enterprises, has been reviewed with the World Bank and agreed in early August 2000. All activities are expected to be completed by the middle of 2001.

d) Performance Audit. A Performance audit is required under the CFC sector plan. The China National Audit Office (CNAO) has informed SEPA that, as the content of this audit is more substantive than the conventional financial audits, additional expenditures are necessary to finance this activity annually. A TOR has been agreed between the Bank and SEPA for this purpose. The 1999 Performance Audit has been completed.

e) Verification of HCFC-22 Producers. The list of producers of HCFC-22 in China has been provided along with the annual program. A survey will be conducted to validate the list and verify whether there have been any changes.

f) Recruitment of international technical consultants. No technical consultants are expected to be recruited in 2000. This activity will be activated when necessary.

Plants producing HCFC-22 in China

17. As required by the agreement on the production sector, China has provided a list of the plants producing HCFC-22 in China, attached in Table A.4 The list will be verified in the second half of 2000 as indicated above.

Table A.1: Status of All CFC Producing Plants under the Production Sector

SRI No.	Name of CFC producers	CFC produced	Capacity (MT /Y)	Status/Date Dismantling verified [1]	Production Data[2] (MT/ODP)	
PART 1: PRODUCTION LINES CLOSED AS PART OF APPROVAL CONDITIONS (CONTRACTS 4&5/ 1999)					"Assigned" Quota	1999 production
A3	Shangdong Dongyue Chemical Co. Ltd. (1 CFC-12 production line only)	CFC-12	5,000	*Aug 16-20, 1999*	1,042	1,042
C2	Hunan Yiyang Chlor-Alkali Chemical Co. Ltd. 1 CFC 12 production line.	CFC-12	1,000	SRI report + *Aug 16-20, 1999*		
C5	Inner Mongolia Baotou Chemical Plant #1. 1 CFC-12 production line.	CFC-12	700	*Aug 23-27, 1999*		
C1	Jiansu Jianhu Phosphate Fertilizer Plant 1 CFC-12 production line.	CFC-12	500	*August 8-13, 1999*		
B4	Sichuan Zigong Fujiang Chemical Plant 1 CFC-11 production line and 1 CFC-12 production line.	CFC-11 CFC-12	1,500 1,000	*August 8-13, 1999*		
B9	Zhejiang Linhai Jianxin Chemical Plant 1 CFC-12 production line.	CFC-12	800	SRI report + *August 16, 1999*		
A14	Guangdong Huiyang Chemical Plant 1 CFC-11 production line and 1 CFC-12 production line.	CFC-11 CFC-12	1,000 3,000	*August 8-13, 1999*		
A1	Henan Hebi Chemical Plant #1. 1 CFC-12 production line.	CFC-12	1,500	*Aug 16-20, 1999*		
C3	Hebei Longwei Fluorochemical Plant #1 2 CFC-12 production lines.	CFC-12	1,080	SRI report + *Aug 16-20, 1999*		
C4	Guizhou Wuling Chemical Plant. 1 CFC-12 production line and 1 CFC-13 production line.	CFC-12 CFC-13	1,500 50	SRI report + *August 8-13, 1999*	18	0
A15	Guangdong Zhaoqing Chemical Plant. 1 CFC-12 production line.	CFC-12	500	*August 8-13, 1999*		
SRI No.	**Name of CFC producers**	**CFC produced**	**Capacity (MT /Y)**	**Status/Date Dismantling verified**	**Production Data[3] (MT/ODP)**	

[1] Exact date of verification visit to plant by the Bank team. References to the SRI report in this column indicate that, according to the technical audit report, the plant had already been dismantled.

[2] All numbers rounded off.

	(PART 1 CONTD.)				"Assigned" Quota	1999 production
C6	Shanxi Shangzhou Chemical Plant1 CFC-12 production line	CFC-12	2,000	*Aug 16-20, 1999*		
A12	Shanghai Shuguang Chemical Plant 2 CFC-113 production lines.	CFC-113	1,000	*August 8-13, 1999*		
B10	Zhejiang Linhai Shuiyang Chemical Plant 1 CFC-12 production line.	CFC-12	500 MT	SRI report + *August 8-13, 1999*		
1	**Total Production capacity dismantled through these closures**	CFC-11 CFC-12 CFC-13 CFC-113 **Total**	2,500 19,080 50 1,000 **22,630**		**0** **1,060** **0** **0** **1,060**	0 1,042 0 0 **1,042**

PART 2: ADDITIONAL PRODUCTION LINES CLOSED IN 1999 (CONTRACTS 4&5/99)

SRI No.	Name of CFC producers	CFC produced	Capacity (MT /Y)	Status/Date Dismantling verified	Production Data (MT/ODP)	
A2	Shangdong Jinan 3F Chemical Co. Ltd. 1 CFC-11 production line	CFC-11	1,500	*Aug 16-20, 1999*	0	0
Not audited by SRI	Liaoning Chemical Group Chlor-Alkali Plant. 1 CFC-12 production line.	CFC-12	1,000	*March 5-8, 2000*	0	0
B15	Fujian Shaowu Fluorochemical Plant. (one CFC-11 production line only; CFC12 line remained in production.)	CFC-11	1,500	*March 5-8, 2000*	0	0
	Total Production capacity dismantled through these closures	CFC-11 CFC-12 **Total**	3,000 1,000 **4,000**		**0**	**0**

[3] Quotas are tradable between enterprises after allocation,and consequently may not match production levels.

Table A.1: Status of All CFC Producing Plants under the Production Sector (con't)

PART 3: PLANTS CLOSED IN 1999 AT APPROVAL IN ACCORDANCE WITH QUOTA REGULATION (CONTRACTS 6/ 99)						
SRI No.	**Name of CFC producers**	**CFC produced**	**Capacity (MT /Y)**	**Status / Date Dismantling verified**	**Production Data (MT/ODP)**	
					1999[4] Quota	**1999 production**
B2	Chongqing Tianyuan Chemical Plant. CFC-11 and CFC-12 on the same production line	CFC-11 CFC-12	500 *	*January 16, 2000*	0	14 0
B5	Hubei Wuhan Changjiang Chemical Plant 1 CFC-11 production line,1 CFC-12 production line	CFC-11 CFC-12	1,500 4,500	*January 15, 2000*	0	0 0
A5	Jiangsu Wuxian Juxing Chemical Plant 1 CFC-11 production line	CFC-11	2,000	*January 14, 2000*	0	0
A6	Jiangsu Wuxian Union (City Link) Chemical Plant. 1 CFC-11 production line	CFC-11	1,800	*January 14, 2000*	0	0
B1	Jiangxi De'an Refrigeration Plant 1 CFC-12 production line	CFC-12	3,000	*January 12, 2000*	0	0
A2	Shangdong Jinan 3F Chemical Co. Ltd. 1 CFC-12 production line	CFC-12	3,500	*August 17, 1999*	0	0
B6	Shanghai Chlor-Alkali Chemical Plant Co. Ltd. 1 CFC-12 production line	CFC-12	7,000	*January 13, 2000*	687	687
	Total Production capacity dismantled through these closures, production 'quota' (derived from baseline) and actual production	CFC-11 CFC-12 **Total**	5,800 18,000 **23,800**		0 687 **687**	14 687 **701**

[4]: Quotas are tradable between enterprises after allocation,and consequently may not match production levels.

Table A.1: Status of All CFC Producing Plants under the Production Sector (con't)

PART 4. PERMANENT PLANT CLOSURES AND QUOTA REDUCTIONS AFTER 2000 ANNUAL QUOTA BIDS (CONTRACTS 12/99)						
SRI No.	**Name of CFC producers**	**CFC produced**	**Capacity (MT /Y)**	**Status/Date Dismantling verified**	**Production Data (MT/ODP)**	
					1999 Quota[4]	**1999 production**
A9	Jiangsu Wuxi Hushan Refrigeration Plant 1 CFC-11 production line	CFC-11	4,000	*For 9/2000*	1,003	560
B3	Sichuan Zigong Refrigerant Plant 1 CFC-11 production line, 1 CFC-12 production line	CFC-11 CFC-12	1,500 1,500	*For 9/2000*	409 54	198
B13	Zhejiang Lanxi Refrigeration Plant 1 CFC-11 production line	CFC-11	2,500	*For 9/2000*	1,670	785
B7	Zhejiang Rui'an Haitian Chem. Co. Ltd. 1 CFC-11 production line	CFC-11	5,000	*For 9/2000*	1,122	617
A4	Shandong Xuecheng Xinxing Chemical Plant 1 CFC-12 production line	CFC-12	1,000	*For 9/2000*	110	0
A10	Jiangsu Changshu Ref. Plant (Changshu 3F) **reduction – quota reduced by 50 MT**	CFC-113	50 (quota reduction only)	*For 9/2000*	See Part 5	
	Total impact on national capacity, production quota, and actual production	CFC-11 CFC-12 CFC113 **Total**	13,000 2,500 50 **15,550**		4,204 164 0 **4,368**	2,160 0 0 **2,160**

[4]: Quotas are tradable between enterprises after allocation,and consequently may not match production levels.

Table A.1: Status of All CFC Producing Plants under the Production Sector (contd.)

PART 5. PLANTS REMAINING IN 2000						
SRI No.	**Name of CFC producers**	**CFC produced**	**Capacity (MT /Y)**		**Production Data (MT/ODP)**	
					1999 Quota[4]	**1999 production**
A8	Jiangsu Meilan Electric Chem. Plant 1 CFC-11 line and 1 CFC-12 line	CFC-11 CFC-12	3000 3000		1,337 1,866	1765 1866
B14	Zhejiang Juhua Florochem. Com. Ltd. Produce CFC-11 and CFC-12 in 1 production line	CFC-11 CFC-12	4000 8000		3,375 6,325	3374 6324
A10	Jiangsu Changsu Refrig. Plant (Changsu 3F) 1 CFC-11 production line, 1 CFC-12 production line, 1 CFC-113 production line and 1CFC-115 production line	CFC-11 CFC-12 CFC-113 CFC-115	10.000 5,000 4,000 200		7,960 2,597 3,086 20	7960 2780 2834 90
A7	Suzhou Xinye Chemical Co. Ltd. 2 CFC-11 production line	CFC-11	7,000		5,809	7408
B8	Zhejiang Linhai Limin Chem. Plant 2 CFC-12 production line and 1 CFC-13 production line	CFC-12 CFC-13	3,000 50		1,189 27	1189 27
B15	Fujian Shaowu Floro-chem. Plant 1 CFC-12 production line	CFC-12	3,500		979	980
B12	Zhejiang Dongyang Chem. Plant 1 CFC-12 production line	CFC-12	5,000		2,053	2051
A13	Guangdong Xiangsheng Chem. Co. Ltd. 1 CFC-12 production line	CFC-12	3,000		1,487	1601
A11	Jiangsu Changsu Yudong Chem. Plant 2 CFC-113 production line	CFC-113	1,000		544	544
B11	Zhejiang Chemical Research Institute 1 production line to produce CFC-114 and CFC-115	CFC-114 CFC-115	100 100		11 72	0 72
		CFC-11 CFC-12 CFC_13 CFC-113 CFC-114 CFC-115 **Total**	24,000 30,500 50 5,000 100 300 **59,950**		18,481 16,496 27 3,630 11 92 **38,737**	20,507 16,791 27 3378 0 162 **40,865**
				Grand Total of Parts 1 through 5	**44,852**	**44,768**

[4]: Quotas are tradable between enterprises after allocation,and consequently may not match production levels.

Table A.2: CFC Production in 1999 verified by CNAO Audit (Figures in MT ODP)

SRI no.	CFC producers	CFC 11	CFC 12	CFC 113	CFC 114	CFC 115	CFC13	Total
A8	Jiangsu Meilan Electric Chemical Plant	1,765	1,866					3,631
B14	Zhejiang Juhua Florochemical Company, Ltd.	3,374	6,324					9,698
B6	Shanghai Chlor-Alkail Chemical Co. Ltd.		687					687
A10	Jiangsu Changsu Refrigerant Plant (Changsu 3F)	7,960	2,779	2,834		90		13,664
B12	Zhejiang Dongyang Chemical Plant		2,052					2,051
B13	Zhejiang Lanxi Refrigerant Plant	786						785
A3	*Shandong Dongyue Chemical Co. Ltd.****		*1,042*					*1,042*
B11	Zhejiang Chemical Research Institute					72		72
A9	Jiangsu Wuxi Hushan Refrigerant Plant	560						560
B3	Sicuan Zigong Refrigerant Plant	198						198
B2	Chongqing Tianyuan Huagong Chemical Plant General	14						14
B8	Zhejiang Linhai Limin Chemical Plant		1,188				26	1,215
A11	Jiangsu Changsu Yudong Chemical Plant			545				545
B15	Fujian Shaowu Floro-Chemical Plant		979					979
B7	Zhejiang Rui'an Haitian Chemical Co. Ltd.	617						617
A7	Suzhou Xinye Chemical Co. Ltd.	7,408	1,602					9,009
	Total	22,682	18,519	3,379	0	162	26	**44,768**

***: Shandong Dongue was targeted for closure in 1999 because it had no production in 1997; however, it produced some CFCs in early 1999 before the agreement. There were fifteen other producers in the first year of the program.

Table A.3: CFC Production in 2000 (Figures in MT ODP) (Data up to June 30, 2000; to be updated at end-year)

SRI No.	CFC producers	CFC 11		CFC 12		CFC 113		CFC 114		CFC 115		CFC 13		Total	
		Quota	Actual Production	Quota	Actual Production	Quota	Actual Production	Quota	Actual Production	Quota	Actual Production	Quota	Actual Production	Quota	Actual Production
A8	Jiangsu Meilan Electric Chem. Plant	1,050	362	1,793	734									2,843	1,096
B14	Zhejiang Juhua Florochem. Com. Ltd.	4,339	2,485	7,760	4,420									12,099	6,905
A10	Jiangsu Changsu Refrig. Plant	10,232	4,731	2,739	2,117	3,036	1,469			20	33			16,027	8,350
A7	Suzhou Xinye Chemical Co. Ltd.	2,532	1,600											2,532	1,600
B8	Zhejiang Linhai Limin Chem. Plant			1,365	584							27	11	1,392	595
B15	Fujian Shaowu Floro-chem. Plant			1,159	549									1,159	549
B12	Zhejiang Dongyang Chem. Plant			2,219	871									2,219	871
A13	Guangdong Xiangsheng Chem. Co. Ltd.			1,100	683									1,100	683
A11	Jiangsu Changsu Yudong Chem. Plant					544	288							544	288
B11	Zhejiang Chemical Research Institute							11	0	72	41			83	41
	Total	18,153	9,178	18,135	9,958	3,580	1,757	11	0	92	74	27	11	**39,998**	**20,978**

There will be no trade in quotas between enterprises in 2000.

Table A.4 List of HCFC-22 producing plants in China

Name	Status
Fujian Shaowu Fluoro-Chemical Plant	*Also reported in 1999*
Guangdong Huiyang Chemical Plant	-do-
Hunan Zhuzhou Chemical Corporation (Group)	-do-
Jiangsu Changshu Refrigeration Plant	-do-
Jiangsu Changshu Elf Atochem 3F Co., Ltd.	-do-
Jiangsu Meilan Electric Chemical Plant	-do-
Liaoning Fuxin Fluoro-chemical Plant	-do-
Shanghai Chlor-Alkali Chemical Co. Ltd.	-do-
Sichuan Chenguang Chemical Research Institute Plant No.2	-do-
Sichuan Zigong Refrigeration Plant	-do-
Shandong Jinan 3F Chemical Co. Ltd.	-do-
Shandong Dongyue Chemical Co. Ltd.	-do-
Shandong Fire Extinguishing Agent Plant Shouguang Division	-do-
Sichuan Zigong Fujiang Chemical Plant	-do-
Wuhan Changjiang Chemical Plant	-do-
Zhejiang Juhua Fluoro-chemical Co. Ltd.	-do-
Zhejiang Dongyang Chemical Plant	-do-
Zhejiang Linhai Limin Chemical Plant	-do-
Zhejiang Yingpeng Chemical Co. Ltd.	-do-

PART B

2001 ANNUAL PROGRAM

Phaseout Objectives

1. The phaseout objective of the 2001 Annual Program is to ensure that CFC production in the year does not exceed 36,200 MT. China is requesting the release of the **third annual tranche** of **US$ 13 million** as agreed in the overall CFC Production Sector Phaseout Plan to achieve this objective. It is envisaged that the US$ 13 million will be allocated for closing CFC production lines or reducing production levels in some CFC enterprises which received production quota in 2001, for technical assistance activities, and for activities relating to substitute development.

Program Activities During the Year

2. ***Policy actions.*** In 2001, the following policies and measures will continue to be implemented by the Government. These policies are considered necessary for the success of a total CFC production phaseout in China.

a) Tradable production quota – The regulation has been under implementation since 1999, and will continue.

b) Export and import control mechanism – The Management Regulation on Export/Import Control of ODS, promulgated in December 1999 by SEPA in collaboration with Ministry of Foreign Trade and Economic Cooperation (MFTEC) and General Administration of Customs (GAC), covers all ODS as well as related equipment and facilities that produce or consume ODS. ODS Export/Import quota and permit systems have been adopted, and all enterprises wishing to export or import ODS must hold both a quota issued by SEPA and MFTEC, as well as specific export/import permits. GAC supervises exports and imports of ODS. China has also promulgated the Export/Import Control List of ODS in China (The First Group) in January, 2000. Under this regulation, China has banned exports and imports of CTC, and introduced quota and permit requirements exports and imports of CFC 11, 12, 113, 114 & 115, CFC 13, halon 1211 and halon 1301.

3. ***Enterprise activities.*** Through the interaction of production quota and bidding systems, bid winners would be granted funds for closure. All CFC reduction or closure contracts are expected to be signed by the end of 2000, but in any case will be signed no later than the end of the first quarter of 2001. Closure projects are expected to take effect from January 1, 2001 and to be completed by the end of June 2001.

4. ***Technical assistance(TA) activities***. TA activities envisaged under the Sector Plan concentrate on strengthening: (a) the overall institutional framework for phaseout; (b) substitute chemical development; (c) management, monitoring & evaluation capabilities of participating institutions; (d) skills of enterprise managers involved in CFC production phaseout activities; and (e) information exchange. These are all essential to the success of the phaseout. All terms of reference and detailed work programs will be agreed with the World Bank before implementation.

Most of these activities are expected to be completed within two years. Proposed 2001 TA activities include:

a) A feasibility study of industrialized technology for CTC conversion to chloro-hydrocarbons other than CTC. There are currently more than 20 plants producing CTC with an annual production of 35,000 MT and total capacity of 70,000 MT in China. Because 90% of CTC production is used as specialized raw materials for CFCs, market prospects and profitability will deteriorate as CFC production is phased out. Two kinds of technical processes dominate CTC production, and it is intended to examine whether one or both are suitable technically and economically for conversion to production of chloro-hydrocarbons other than CTC. For this purpose, laboratory and pilot experiments must be conducted to determine technical and economic feasibility. Since the experiments under this TA are expected to take almost two years, the 2001 Annual Program will finance the laboratory experiments, and pilot experiment at selected enterprises will be financed by another TA in the 2002 annual program.

b) Training of personnel involved in implementation of phaseout activities. To implement the phaseout plan effectively, it is necessary to train staff in: (i) local environmental protection bureaus; (ii) local bureaus of Petroleum and Chemical Industry or relevant agencies; (iii) CFC producers; (iv) Customs; and (v) audit agencies. Training is needed to prepare enterprises to bid in the following year, to train government officials to properly supervise CFC production, and to learn operating procedures of the CFC production sector phaseout approach. This type of training will need to be repeated every year in the first few years of implementation. For the 2001 Annual Program, a workshop to evaluate progress in the phaseout program, including ODS production phaseout, consumption demand and substitutes supply, is included.

c) Market prospects for closure and production enterprises. Based on the generally successful experience of this activity in previous years, a similar technical assistance package enabling both closure and production enterprises to carry out analysis and study of alternative commercial options, will be put into operation

d) Recruitment of international technical consultants. Consultants will be recruited, where and when necessary, especially in the field of CTC conversion, to provide technical guidance to CTC conversion activities.

e) Risk Assessment Study: This study was originally part of the UNEP Business plan for 2000, and has been transferred to the Bank after discussions during the July 2000 meeting of the ExCom. China and the Bank have been discussing the methodology and coverage of this study, and it will be included in the 2001 Annual Program activities after the TOR is agreed.

f) SNAP – To guide the production and consumption of ODS substitutes in the years ahead, SEPA intends to issue a List for ODS Substitutes in China. For this purpose, it will carry out a comprehensive study, including a proposed collaborative study with the USEPA on its experience, a survey on production and application of substitutes in

the domestic market, and tests to identify the character of substitutes. TORs will be developed

g) Performance Audit. A Performance audit is required under the CFC sector plan. The China National Audit Office (CNAO) has informed SEPA that, as the content of this audit is more substantive than the conventional financial audits, additional expenditures are necessary to finance this activity annually. A TOR for the 2000 performance audit will be agreed between the Bank and SEPA for this purpose by November 2000, and the audit is expected to be completed by June 30, 2001.

h) Other TA activities that are necessary for effective phaseout may be developed during the year.

5. ***Special Initiatives***: As the phaseout of ODS production proceeds, the demand for substitutes in the consumption sector has increased rapidly. The impact of the first two years of implementation of CFC sector plan equals a phaseout of more than 10,351 tons of CFC 11 and 12. The phaseout of CFC-11, which is the major foaming agent, has impacted on production in the foam sector, and there is an urgent need to move into production of substitutes such as Cyclopentane and HCFC-141b. The use of CFC-12 as refrigerant in air-conditioners installed in all newly produced cars will be forbidden from January 1, 2002. It is estimated that the demand for HFC-134a, presently the only substitute of CFC-12 in the MAC sector in China, will exceed 7,500 tons in 2005 in this sector alone, and could reach 19,000 tons by 2010. China therefore envisages an urgent need to initiate special initiatives to produce such substitutes to ensure that there is no shortfall in their supply. China therefore intends to review the scope of adequate domestic production of HFC134a. In the 1999 annual program, a TA activity was included to evaluate the bidding proposals on establishing a HFC 134a production facility. A bid winner was selected in June 2000 and a feasibility study for HFC-134a production has been initiated; the study is expected to be completed and evaluated in 2000. The study will be reviewed by the Chinese authorities, and if it is considered acceptable, China intends to support the establishment of a production facility for HFC-134a, and may provide financial support from grant proceeds, as provided under the provisions of maximum flexibility in section (d) of the Agreement for the China Production Sector.

6. The above policy initiatives, enterprise-level and technical assistance activities are summarized in Table B.1 below.

TABLE B.1: 2001 ANNUAL PROGRAM (AMOUNT IN US$ MILLION)

CFC production phaseout targets						
	Funding (US$ mill.)	2000 Quota[4] (MT)	Phaseout in 2001 (MT)	Allowed Production in 2001[5] (MT)	Performance Indicators	Key Dates
CFC in terms of ODP	13	39,998	3,798	36,200	1. Closures of current producers and reduction in production in remaining producers 2. Implementation of TA activities to help phaseout. 3. Production level not more than 36,200 MT	1. Dec. 2000-June 2001 2. Dec. 2000-Dec. 2001 3. Dec.31, 2001
Policy Initiatives						
Initiatives	Funding	Performance Indicators				Key Dates
1. Bidding system	incl.in TA n.a. n.a. n.a. incl. in TA	1. Training enterprises for bid preparation in the 2001 bidding 2 Determine winning enterprises for 2001 3. Sign closure contracts with bid winners 4. Implement closure contracts 5 Train enterprises for bid preparation for 2002 bidding				1. Oct. 2000 2. by Dec. 2000 3. Dec. 2000 4. Dec. 2000-June 2001 5. Oct. 2001
2. Tradable production quota for CFC producers	n.a.	1. Establish 2001 annual CFC production quota 2. Issue annual production quota to CFC producers for 2001				1. Feb. 2001 2. Feb. 2001
3. Import/export trade management	n.a.	1. implement the import/export trade management mechanism.				1. January 2001-December 2001
Eneterprise activities						
	Funding (US$ million)	Existing lines	# of lines targeted	# of lines at end of 2001	Performance Indicators	Key Dates
Closure of CFC11/12/113 production lines	12.00	17	t.b.d.	t.b.d.	1. Training of bidders 2. Bidding for grant funds 3. Selection of bid winners 4. Contracts signed 5. Facilities dismantled, and reports completed	1. Oct. 2000 2. Oct. 2000 3. by Dec.. 2000 4. end-Dec. 2000 5. no later than June 2001
Special Initiatives						
	Funding (US$ million)					Key dates
HFC 134a Production	t.b.d.	Establishment of HFC-134a production facilities of up to 10,000 MT				t.b.d.

[4] Total quota issued for 2000, compared with the amount allowed under the Phaseout Plan of 40,000 MT.
[5] Maximum production quota that can be allocated for calendar 2001.

TABLE B.I: 2001 ANNUAL PROGRAM (CONT.')
(AMOUNT IN US$ MILLION)

Technical assistance activities			
Activities	Funding [1/] (US$ Million)	Performance Indicators	Key Dates
1. A feasibility study of industrialized technology for CTC conversion to chloro-hydrocarbon other than CTC	0.15	1. TOR to be agreed with the Bank 2. Select Contractor 3. Contract signing 4. Basic information gathering in China 5. Investigation abroad 6. Laboratory experiments 7. Seminar to discuss technology conversion 8. Final report	1. December 2000 2. Mid Feb. 2001 3. End March 2001 4. no later than May. 2001 5. no later than May. 2001 6. June 2001-Oct. 2002 7. no later than Nov. 2002 8. no later than Dec. 2002
2. Training	0.10	1. TOR to be agreed with World Bank 2. Training on supervision and evaluation of CFC production, bidding system, management of CFC production quota system, and CFC Project Implementation Manual 3. Seminar on review of ODS production phaseout	1. Oct. 2000 2. Start in Jan. 2001. Specific schedules to be detailed in TORs 3. Sept. 2001
3. Recruitment of international consultants	0.10	1. Finalization of TORs for consultant assignments 2. Signing of contracts 3. Completion of work and submission of reports by consultants	1. Throughout 2001 2. Throughout 2001 3. Throughout 2001
4.Risk Analysis	0.20	TOR to be agreed with the Bank	By June 2001
5.SNAP	0.25	1 TOR to be agreed with the Bank 2 Select Contractor 3 Contract signing 4 Basic information gathering in China 5 Investigation abroad 6 Laboratory experiments 7 Seminar to discuss substitute list 8 Final report 9 Issue substitute list (first group)	1 December 2000 2 Mid Feb. 2001 3 End March 2001 4 no later than May. 2001 5 no later than May. 2001 6 June 2001-Oct. 2002 7 no later than Nov. 2002 8 no later than Dec. 2002 9 first half of year 2003
6.Market prospects for closure etc.	0.10	1. TOR to be agreed with the bank and Invitation of applications 2. Bid evaluation 3. Bid award 4. Contract signing 5. Contracts signing between bid winners and their contractors 6. SEPA receipt of progress reports from bid winners 7. Completion of projects by individual bid winners 8. SEPA completion report for the project	1 No later than Feb.2001 2.June 2001 3. June 2001 4. July 2001 5. July-August 2001 6. Sept. 2002 7. Nov. 2002 8. End of 2002
Recruitment of international technical consultants	0.10		1. Throughout 2001-2002
Subtotal	1.00		
TOTAL for phaseout activities	**13.00**		

[1/] These are estimated costs. After bidding for TA contractors, these costs will be adjusted to reflect contractual amounts for each TA. All TA activities are to be completed in two years from January 2001.

SOLVENT SECTOR PLAN

FOR ODS PHASEOUT IN CHINA

Amendment of
FIRST IMPLEMENTATION PROGRAMME

(July 1, 2000 – December 31, 2001)

Date of Amendment: 10 October, 2000

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Solvent Sector Plan for ODS Phaseout in China

First Implementation Programme

A. Background

Solvent Sector Plan for ODS Phaseout in China was approved at the 30th Executive Committee (ExCom) Meeting in March 2000. The ExCom, by Decision 30/56 approved the 29 March 2000 "Agreement for ODS Phaseout in China's Solvent Sector" with total funding of US$52 million. United Nation Development Programme (UNDP) agreed to be the international implementing agency of this programme for the first three yeas at a fee of 10% of funds allocated during that period. The execution duration of First Implementation Programme of China's Solvent Sector Plan is from July 1, 2000 to December 31, 2001. Before the end of June 2000, UNDP and SEPA signed the Project Document of Solvent Sector Plan for ODS Phaseout in China and the draft Project Implementation Manual (PIM) for this sector plan was finalized and agreed upon. Based on the Project Document and the PIM, Request for Proposal for the selection of a Domestic Implementing Agency (DIA) was issued to 9 selected potential bidders on 28 June 2000. The bid evaluation of the DIA was completed before the end of August 2000 and a Chinese enterprise based in Beijing was selected to be the DIA. The selection was approved by the UNDP headquarter in September 2000.

On 9-11August 2000, SEPA and the Ministry of Information Industry (MII) organized a Nation Conference for the Implementation of Solvent Sector Plan. 42 enterprises participated in the meeting, most of them are large CFC-113 consumers and will be candidates of ODS solvent phaseout project for the First Annual Programme. The Alternative Technology Support System (ATSS) was developed during the pre-session on 8 August 2000. The ATSS consists of national expert group (12 candidates), 6 industrial associations, 3 alternative technology support centers (research institutes) and more than 20 alternative solvent and equipment suppliers.

To meet the requirement in the Agreement for ODS Phaseout in China's Solvent Sector, the DIA, in cooperation with the Special Working Group for Solvent (SWG) under the Foreign Economic Cooperation Office (FECO) of SEPA, prepared the Bidding Document that was issued to 30 large CFC-113 consumers and invited these enterprises to participate in the bidding for the 2001 ODS Reduction Contracts. All these enterprises have been pre-registered and have expressed their interest on non-ODS cleaning technology conversion. Total consumption of these consumers is more than 640 MT CFC-113 in last year, and 466 MT CFC-113 reduction contracts are expected to be signed before 24 November 2000 through this bidding process.

In preparation for the implementation of the Solvent Sector Plan, China realizes that the most important challenge is to provide sufficient alternative solvents and equipment at reasonable price in good quality to the market. At present in China, the imported alternatives are all at very high price and most Chinese enterprises can not afford it. Some local enterprises can provide some alternative solvents and equipment but the supply is still at low quantities. Therefore, FECO/SEPA and MII plan to support and expand the local alternative production capacity in the Solvent Sector Plan so as to meet the requirements of the ODS solvents phaseout. China believes that this is the best way to reach the ODS solvents phaseout target and will make project implementation more smoothly and successfully.

On the basis of half year preparation for the implementation of Solvent Sector Plan, China amends the First Implementation Programme (2000-2001) with addition of support to local alternatives development and production, reallocation of budget for some of the technical assistance activities, reschedule of the 2000 and 2001 bidding process but with no changes on the phaseout target.

B. Phaseout Scope and Approach

The Solvent Sector Plan uses a phased, performance-based approach as described in detail in the final version of "Solvent Sector Plan For ODS Phaseout in China" (March 30, 2000) to phaseout consumption of CFC-113, TCA and CTC in cleaning applications and development and implementation of an Alternative Technology Support (and delivery) System (ATSS). The scope of the First Implementation Programme is now amended to include the development and investment of alternative solvents indicated in vi):

i.) Develop and begin implementation of the ATSS for all solvents and technologies;
ii.) Develop and begin implementation of the Voucher System for small solvent users;
iii.) Undertake and complete ODS Reduction Contracts with about 20-40 large and medium user enterprises and redeem vouchers with about 100 small users in the second year to eliminate consumption of 466 MT tons CFC-113 and 100 MT tons TCA by the end of 2001; (the contracts will give a total reduction of 1,121 MT tons for CFC-113 and 200 MT tons for TCA, with the balance resulting in reductions in 2002)
iv.) Undertake technical assistance activities described in Table 3;
v.) Undertake policy action described in Table 3; and
vi.) Develop of alternative solvents and initiate investment to increase capacity of local production, Table 4.

C. Actions and Proposed Funding

Solvent consumption phaseout requires implementation of investment projects at the enterprise level, with, on the average, about one year lag between local funding approval at the enterprise level and commissioning of non-ODS technology system. Thus, this First Implementation Programme covers funding for 18 months, with the first ODS phaseout results being achieved in 2001 and additional results achieved in 2002. Activities and proposed funding for the Implementation Programme are summarized in Table 1 and shown, respectively, for 2000 (six months) and for 2001 (for 12 months). The funding allocation for ODS Consumption Reduction Contracts and for Development and Investment on Alternative Solvents Production may be slightly adjusted based on phaseout cost requirement at enterprises level. Details are given in Table 2 to Table 4. Performance indicators are shown in Table 5.

At its 30th Meeting, the Executive Committee approved the payment of US$ 6.75 million for China to implement the First Implementation Programme, to cover the period from July 1, 2000 through December 31, 2000. The ExCom also decided that an additional US $6.955 million will be made available in January 2001, for the period January 2001 through December 2001, upon satisfactory verification that China has finished the bidding process for phaseout in 2001, to be reported at the 32nd Meeting of the Executive Committee.

At the conclusion of the First Implementation Programme, China will have reduced CFC-113 consumption to 3,375 MT tons (ODS) during calendar year 2001, and 2,750 MT tons (ODS) CFC-113 in 2002, including phaseout results from ongoing projects.

Table 1 Activities and Proposed Funding (US$ 1,000)

Enterprise Level Actions	2000	2001
ODS Consumption Reduction Contracts (or vouchers redeemed)		
2000/2001 1,121 tons CFC-113*		
estimated 20-40 larger and medium users of CFC-113	4,500	5,000
2001 estimated 100 small users of CFC-113 under voucher system		
2000/2001 200 tons TCA under above ODS Reduction Contracts		
	500	505
Development and Investment on Alternative Solvents Production	1,250	750
Technical Assistance, including policy actions and development of ATSS	500	700
Proposed Funding	6,750	6,955

* The contracted phaseout target will be properly higher than 1,121 tons CFC-113 to safely meet the agreed phaseout target.

D. Enterprise Level Actions

Enterprise level activities focus on identifying, funding and implementing about 20-40 large and medium sized projects during 2000-2001, identifying and completing about 100 small sized projects through redeemed vouchers in 2001, plus identifying projects that would be funded in the Second Annual Implementation Programme (2002). Project identification will be carried out in several ways. UNDP will take an active role in identification/development of phaseout projects, but the principal focus will be on use of local resources including PMO, DIA, MII, ATSS agencies, technical institutions and local consultants. Promotional work will include dealers, equipment manufacturers, provincial level industrial bureaus and use of media outlets.

Projects to be implemented in the first year will require that ODS Reduction Contracts be signed by November 2000. PMO has undertaken an accelerated action plan to identify, bid and negotiate these contracts starting in September 2000. The focus will be on the larger enterprises in sub-sectors such as LCD. These sub-sector enterprises have already initiated action on early ODS phaseout and are well positioned to have contracts signed by November 2000. This expedited action has been done in parallel with the development of the formal bidding system and selection of DIA. The bidding for the second group of projects will proceed in early 2001 under the normal operational procedures as described in Chapter VI of the Solvent Sector Plan.

Table 2 Implementation Programme - Phaseout Targets and Enterprise Activities (July 1, 2000 – December 31, 2001)

SOLVENT CONSUMPTION PHASEOUT TARGETS & ACTIVITIES (CFC-113 and TCA)							
	MLF $ million Requested	**Start of programme (MT)**	**Reduction Target (MT)**	**Reduction Contract (MT)**	**End of programme (MT)**	**Key Actions Required**	**Key Dates**
CFC-113 Domestic consumption	4.5(2000) 5.0(2001) Total 9.5		466	1,121		Conversion of ODS solvent enterprises to non-ODS cleaning technology	July 1, 2000 – Dec 31, 2001
CFC-113 Import		149	149		0	Ban on import and management on export	
Ongoing project			600				
Consumption Phaseout target		4,441	1066		3,375		By December 31, 2001

TCA	0.5(2000) 0.505 (2001)	6,230	100	100	6,130	Require all ODS reduction contracts to include 100% of all solvent use by enterprise bidding	

ENTERPRISE-LEVEL ACTIVITIES (For CFC-113 and TCA)

	Estimated MLF $ million requested	**# of enterprises targeted**	**Key Actions Required**	**Key Dates**
1. Conversion of ODS consumers	CFC-113 4.5 (2000) CFC-113 5.0 (2001) TCA 0.5 (2000) TCA 0.505 (2001)	1. L/M: 20-40 (2000 and 2001) 2. Small: 100 (2001) Included in L/M contracts	1 Sign ODS reduction Contracts (20-40) 2. Redeem vouchers with 100 small users	1. 2000 Bid winners and contracts signed by November 2000; 2001 Bid winners and contracts signed by June 2001 2. During 2001

E. Development of Alternative Technology Support System

The ATSS consists of national solvent expert group, three technology institutes, industrial associations, a small number (about 5 to begin with) of equipment suppliers, several solvent producers and selected solvent dealers that will supply technology and technical assistance to ODS solvent users. The ATSS will have the technical ability and experience to supply alternative cleaning technologies and equipment, and will develop technical support capability to assist small solvent users/customers regarding their selection of the most appropriate option for moving to a non-ODS operating design. The ATSS will be developed during 2000 and begin delivering its technical services and equipment during 2001.

F. Policy Actions

The following policies will be promulgated to support implementation of the First Implementation Programme and the overall Solvent Sector Plan:

(a) *Bidding* -- A bidding system for consumption phaseout will be implemented following approval of this Implementation Programme. Recipient enterprises will be determined through a bidding procedure administrated by DIA/PMO. The lowest bidders will be awarded grant funds after bid evaluation. PMO will sign ODS Reduction Contracts with the winning enterprises.

(b) *Production quota* -- A regulation on a production quota for CFC-113 is being implemented under the CFC Production Sector Plan. The production quota of CFC-113 for 2000 is 4,125 tons ODS (3,300 tons ODP) and for 2001, 3,375 tons ODS (2,700 tons ODP). This is the key policy instrument for accomplishing the phaseout objective.

(c) *Banning newly-built equipment which produces or uses ODS*:--On Nov. 11, 1997, SEPA together with other ministries promulgated "The notice on banning newly-built enterprises which produce or use ODS". It is very important to continue to implement

the Notice and to achieve sustainable phaseout results. SEPA will disseminate details of the notice to all prospective consumers through various channels (news media, bulletin, propaganda.)

(d) Phaseout for enterprise ineligible under MLF guidelines with respect to foreign ownership or export share of output should phaseout ODS solvents by their own resources and on a schedule consistent with the overall solvent phaseout schedule.

(e) *Controlling supply and consumption of ODS solvent* -- The following regulation will be implemented to control supply and consumption of solvent:

(i) Imports and exports: CFC-113 imports and exports will be controlled in 2000 and banned after January 1, 2001; import and export of TCA will be controlled after July 1, 2000 and export ban on TCA will be added after January 1, 2001.

(ii) Local production of CFC-113 will be controlled under the CFC Production Sector Plan and production of TCA is expected to be controlled under the CTC/TCA Production Sector Plan now being prepared by SEPA and the World Bank;

(iii) Enterprises that implement projects under the Solvent Sector Plan will not be permitted to use any ODS solvent after their respective projects are completed.

(iv) Ban on use of new solvent with higher ODP: after January 1, 2001, solvent users will not be permitted to switch to different solvent with higher ODP.

(f) *Establishment of standards and technical norms* -- These standards will be developed in TA activities as described below.

G. Technical assistance (TA) activities

TA activities concentrate on:

(i) strengthening the overall institutional framework;
(ii) management, monitoring and evaluation capabilities of participating institutions;
(iii) training enterprise managers, technical personnel and decision makers at various levels,
(iv) development of the Alternative Technology Support System.

All terms of references and work schedule will be agreed with UNDP prior to signing contracts and initiating work.

Main TA activities include:

(a) *Development of a Management Information System (MIS) for ODS solvent phaseout in the solvent sector* - The MIS is an important tool in management and supervision of all phaseout activities. It is used to monitor performance in the solvent phaseout and to generate progress reports on implementation of the Solvent Sector Plan required by ExCom and UNDP. An information management center will be established in PMO and two sub-stations in MII and DIA.

(b) *Public Awareness Campaigns* -- Introduce and publicize Solvent Sector Plan and ODS solvent phaseout schedule in newspaper and other media to make people, especially the ODS solvent users to understand the phaseout plan. Provide information and guidance to the related enterprises to make them aware of how to prepare and take part in the phaseout actions.

(c) *Training of personnel involved in implementation of phaseout activities* -- It is necessary to provide training for: 1) environmental staff and decision makers to increase their

recognition and management capacity, 2) industrial managers and technicians to enhance their understanding of alternative technology and to master how to use it, 3) ODS and substitute solvent dealers to deliver information on update alternative non-ODS solvent technology to their users, especially for SME. Training is needed to prepare enterprises to bid in the following year, to supervise solvent production and consumption, to manage and monitor ODS import and export, and to learn operating procedures in the solvent sector phaseout approach. This type of training will need to be repeated every year in the first few years of implementation.

(d) *Developing Alternative Technology Support System* -- The ATSS will include three technical support centers (including No. 46 Institute funded by MLF, one institute in Shanghai funded by Swedish Government and a third center in Guangdong being developed), national solvent expert group, plus dealers, procurement agent(s) and local equipment suppliers. The support system will provide services such as technical consulting and support and includes development of a promotion and delivery system to reach the many small solvent users, as well as development and promotion of low cost alternate solvents and development and promotion of low cost local equipment and low cost conversion processes.

(e) *Establishment of a Third Technical Center*: Proposed in Guangdong to be developed in 2000/2001. The scope and objectives of the third technical support center will be substantially the same as for the first two centers.

(f) *Establishment of standards and technical norms:*

1) Production safety regulations on using flammable substances as solvent;
2) Environmental regulations on using toxic substances as solvents;
3) Related environmental regulations on solvents without ODS;
4) Technology identification of solvent without ODS;
5) Standards for quality identification of solvents without ODS.
6) Standards for non-ODS alternative cleaning technologies.

(g) *Preparation for the development of a solvent management plan* -- The Solvent Sector Phaseout Plan lays out principles for establishment of a solvent management plan. This represents only the first stage of development to initiate all preparatory work. Issues and activities are highlighted below:

(i) Rapid phaseout of ODS solvent production in China will cause demand after 2010 to be covered increasingly by substitutes. This makes it imperative that preparation work for the development of ODS substitutes to start in 2000. Preparation of the plan will draw on experiences from developed countries.
(ii) Determine essential and necessary usage in the solvent sector.
(iii) Conduct survey and study on the alternative solvents, and assist in the selection of alternatives, testing, tryout and spreading of ODS substitute activities in selected enterprises through demonstration.

(h) *National and International Consultants* -- Recruit national and international consultants to provide alternative technical services for training and technical conversion guidance to ODS solvent users.

The above policy initiatives, enterprise-level and technical assistance activities are summarized in Table 3 below.

Table 3 Implementation Programme - Policies and TA Activities

(July 1, 2000 – December 31, 2001)

POLICY INITIATIVES		
ACTIVITIES	**Actions Required**	**Key Dates**
1. Bidding system	1. Establish operating procedures; 2. Train enterprises for bid preparation 3 Determine winning enterprises 4 Sign ODS Reduction Contracts; 5 Implement ODS Reduction Contracts.	1. System in place by July, 2000 2. July-August 2000 for 2000 activities & March-April 2001 for 2001 activities 3. By November 2000 and June 2001 4. By November 2000 and June 2001 5. After November 2000, for 12-18 month implementation period
2. Production Quota	1. The production quota of CFC-113 for 2000 will not exceed 4,125 tons ODS (3,300 tons ODP) 2. For 2001 will not exceed 3,375 tons ODS (2,700 tons ODP).	1.By the end of 2000 2.By the end of 2001
3. Notice on banning newly-built enterprises which produce or use ODS	1. Promotional campaign, through various channels; 2. Joint supervision of Notice by local Electronic Bureaus and EPBs.	
4. Notice: Foreign enterprises should phaseout ODS solvent by own resources.	Promotion campaign and monitoring	From July 2000
5. Controlling import and export of ODS solvent	1. Import and export of CFC-113, TCA and CTC will be controlled in 2000; 2. Import and Export of CFC-113 and CTC will be banned in 2001; 3. Export of TCA will be banned in 2001.	1. By July 1, 2000 2. By January 1, 2001 3. By January 1, 2001

TECHNICAL ASSISTANCE ACTIVITIES			
ACTIVITIES	**MLF funding requested (US$'000)**	**Actions Required**	**Key Dates**

a. MIS development	50	MIS center will be located in PMO, with substations in MII and DIA	1. Start preparation in June 2000. 2. Operational at end 2000.
b. Public Awareness	70	Promote public awareness of enterprises on ODS solvent sector phaseout activities	Start no later than July 2000
c. Training	90	Training on supervision of ODS solvent consumption and operating manual.	Start no later than July 2000
d. Strengthening ATSS	170		Start in June 2000
e. Establishment of third technology center	200		Start in September 2000
f. Preparation for the development of a non-ODS solvent management plan	300	1. Preparation of a report on experiences from developed countries. 2. Determine essential and necessary usage in the solvent sector	Start no later than September 2000
g. Establishment of standards and technical norms	250	By qualified institution	Start no later than October 2000
h. National and International Consultants	70		Start no later than July 2000
Total for TA Activities in 2000 - 2001	1,200		

H. Development and Investment of Alternative Solvents Production

The potential candidates of alternatives to be developed include n-propyl bromide (nPB), hydrate-carbon, HFCs, etc. Based on cleaning test and market analysis conducted in China so far, there are several non-ODS solvents produced locally that could be used to replace CFC-113 and TCA in industrial production as alternative solvent, such as HEP-2 (including nPB) and HT-1 (including hydrate-carbon), but the supply of these alternative solvents is still at low quantity and higher price. It is therefore important to support the development and local production of these alternative solvents so as to have sufficient supply at lower price to reduce the cost of phaseout actions and make the implementation of Solvent Sector Plan more successfully and smoothly. All ODS consumers will be encouraged to take part in the phaseout actions more actively and can therefore benefit from this support. The implementation of development of alternative solvents will follow the Guideline for management of investment on ODS substitute production which is being developed.

Two locally developed alternative solvents, HEP-2 (including nPB) and HT-1 have been evaluated by Chinese industries and found to be economically and technically acceptable alternative solvents. Testing and pilot production in some sub-sectors have proven to be effective and their use being accepted by those enterprises. HEP-2 is a chemical mixture, its main component is nPB (60-70%) and 3

other non-ODS, non-toxic chemicals. Its physical property is quite similar to TCA and can be used for cleaning instead of CFC-113 and TCA in many applications, such as LCD and metal cleaning. At present, HEP-2 is imported from USA at 1.5 to 2 times the price of CFC-113. As HEP-2 is produced and used in America and its cleaning property has been proven by testing and pilot production in China, SEPA has provided to the enterprises as one of the alternative solvents to be used in preparing for the first year bidding.

HT-1 is a locally produced co-solvent. Its main component is hydrate-carbon. Its has zero ODP and has no toxicity. HT-1 was used safely for several years in aviation industry in China. It cannot be used widely as CFC-113 and TCA, but it can be used as one alternative option for ODS phaseout in some sub-sectors and enterprises.

While China understands that nPB is a low ODP substance and that the Scientific Assessment Panel and the TEAP are evaluating nPB and will draft new report regarding its ODP value and toxicity, China will abide by the decisions made by the Parties and the Executive Committee regarding its usage.

Realizing the importance and necessity of developing local alternative solvents to provide sufficient good quality at reasonable price to enterprises that will undertake ODS phaseout activities, China will support the local development and production of HEP-2 and HT-1. If a winning enterprise chooses to use HEP-2 as an alternative solvent, China will approve its usage in the appropriate applications. China will ensure that the decision of the Parties and the Executive Committee regarding the usage of these alternative solvents will be strictly followed.

Table 4 Implementation Programme – Development and Production of Alternatives

ACTIVITIES	**MLF funding requested (US$'000)**	**Actions Required**	
Development and Investment on Alternative solvents production	1,250 (2000) 750 (2001)	1. Selected alternative(s) to be developed; 2. Selected enterprise(s) through bidding process to develop alternative production.	1. By June 30, 2001 2. By December 31, 2001

Table 5 Implementation Programme (2000 - 2001)

Performance Indicators

Solvent Phaseout Targets				
Solvent sub-sector	Start of programme (MT)	Reduction Target (MT)	End of programme (MT)	Indicators to be reported on in semi-annual progress reports. Verified in annual performance audits
CFC-113 Imports/exports	149	149	0	• Ban on exports and imports effective January 1, 2001
Domestic consumption and phaseout target	4,441	466 (plus 600 from on-going MLF projects)	3,375 (in 2001) 2750 (in 2002)	• Consumption levels (production plus imports minus exports)
TCA	-	>100	-	• Included in ODS Reduction Contracts
Number of ODS Reduction Contracts (inclusive of TCA supplement) Voucher Redeem		L/M 20-40 S 100 (2001)		• Number of contract signed (sum of ODS reduction in the contracts) • Progress under contracts • Number of voucher redeemed
Development and Investment on alternative solvents production				• Strategy developed and potential alternatives to be developed selected by June 30, 2001 • Enterprises selected for investment through bidding process.
Policy and TA Initiatives				
Initiatives	Indicators to be reported on in semi-annual progress reports			
1. Bidding system	• Bidding system's operating procedures finalized • Winning enterprises for 2000 – 2001 selected • Enterprises trained for bid preparation for 2000 and 2001bidding			
2. Public Awareness	• Introduce Solvent Sector Plan and phaseout schedule on two newspapers • Invite ODS solvent users to take part in the reduction bidding and promote the enterprises to participate in the phaseout actions			
3. Training	• Provide personal training courses to ODS users, EPBs and local line ministries			
4. Notice on banning newly-built enterprise which produces or uses ODS solvent	• Promotional campaigns on the ban; • Local Electronic Bureaus and EPBs engaged in overseeing ban enforcement.			
5. Developing ATSS	• Contracts issued, progress reports			
6. Establishment of standards and technical norms	• Contracts issued, progress reports			