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Country: People's Republic of China

Project Document

Project Title	Preparation of HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector in China (Stage II)
UNDAF Outcome(s):	Outcome: Government and other stakeholders ensure environmental suitability, address climate change, and promote a green, low carbon economy
Expected CP Outcome(s): (Those linked to the project and extracted from the CPAP/UNDAF Action Plan)	Low carbon and other environment sustainable strategies and technologies are adapted widely to meet China's commitments and compliance with Multilateral Environment Agreements
Expected Output(s): (Those that will result from the project and extracted from the CPAP)	Finalized HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector (Stage-II) in China to address the 2020 phase out target
Executing Entity:	Foreign Economic Cooperation Office, China Ministry of Environmental Protection (FECO/MEP)
Implementing Agency:	United Nations Development Programme (UNDP)

Project Summary

The XIXth Meeting of the Parties to the Montreal Protocol in September 2007, through its Decision XIX/6, adopted an accelerated phase-out schedule for HCFCs. The first control step is to freeze production and consumption of HCFCs from 1 January 2013, at the Baseline Level (average of 2009 and 2010 levels). The other control targets are reduction of 10% by 2015, reduction of 35% by 2020, reduction of 67.5% by 2025 and reduction of 97.5% by 2030, allowance of 2.5% of baseline (annual equivalent) for period 2030-2040 and complete phase out by 2040. China is an article five party to the Montreal Protocol and must comply with the above phase out timetable.

At the 73rd Meeting of the Executive Committee, Preparation of an HCFC Phase-out Management Plan (HPMP) for the Industrial and Commercial Refrigeration Sector (Stage II) in China was approved by the Executive Committee, with UNDP as the implementing agency. Total approved funding was US \$330,000. The preparation project will assist China to carry out industry surveys to the ICR sector, conduct data analysis, review of alternative technologies, hold coordination and consultation meetings with national stakeholders, propose policy measures for HCFCs controls, calculate cost for stage II phase out activities and formulate the HCFC Phase out Management Plan proposal to address the 35% reduction by 2020 in the ICR sector. Upon completion of this preparation project, an HPMP proposal for ICR sector (stage II) will be submitted to the Multilateral Fund Secretariat for consideration.

Implementation of this preparation project will follow the rules and procedures of National Execution (NEX). The Performance Based Payment (PBP) mechanism will be applied to fund request and disbursement between UNDP and FECO.

Programme Period: March 2015 – June 2016	Total resources required	330,000US\$
Key Result Area (Strategic Plan):	Total allocated resources:	_____
Atlas Award ID: _____	• Regular	_____
Start date: 1 March 2015	• Other:	_____
End Date 30 June 2016	• MLF	330,000US\$
Management Arrangements: National Execution (NEX)	In-kind Contributions	-

Agreed by FECO/MEP:

Date:

Agreed by UNDP:

Date:

LIST OF ABBREVIATIONS

MP	Montreal Protocol
MLF	Multilateral Fund for the Implementation of the Montreal Protocol
MOP	Meeting of Parties to the Montreal Protocol
ExCom	Executive Committee of the Multilateral Fund
CFC	Chlorofluorocarbons
HCFCs	Hydrochlorofluorocarbons
CTC	Carbon Tetra Chloride
FECO	Foreign Economic Cooperation Office
MEP	Ministry of Environmental Protection, China
CP	Country Programme
HPMP	HCFC Phase-out Management plan
HPPMP	HCFC Phase-out Production Sector Management Plan
ICR	Industrial and Commercial Refrigeration
ODS	Ozone Depleting Substances
ODP	Ozone Depleting Potential
GWP	Global Warming Potential
MT	Metric Tonnes
IA	Implementing Agency
UNDP	United Nations Development Programme
PBP	Performance Based Payment

I. SITUATION ANALYSIS

1. OBJECTIVE

The objective of this project is to assist the Government of China to formulate the Hydrochlorofluorocarbons (HCFCs) Phase-out Management Plan (HPMP Stage II) for the Industrial and Commercial Refrigeration (ICR) sector which will incorporate the strategy and action plan for China to accomplish 35% reduction of HCFCs consumption in the ICR sector by 2020. The HPMP for ICR sector (Stage II) is targeted for submission to the Executive Committee of the Multilateral Fund (MLF) for review and approval at its 76th Meeting in 2016.

2. BACKGROUND

2.1 ODS Phase Out in China

China signed Vienna Convention for the Protection of the Ozone Layer in June 1989, Montreal Protocol on Substances that Deplete the Ozone Layer (hereinafter Montreal Protocol) in June 1991. As of May 2010, China has ratified all amendments to the Montreal Protocol. Chinese government compiled and approved "Country Programme for Phase-out of Ozone Depleting Substances" (hereafter the Country Programme) in January 1993 and established phase-out strategies for major sectors of ODS production and consumption in 1995. In November 1999, Chinese Government updated the Country Program. According to the Country Program, with the support of Multilateral Fund and international institutions, China has conducted more than 400 projects and 18 sector plans to phase out production and consumption of CFCs, Halons, CTC, TCA and Methyl Bromide in the Chemical Production sector, Automobile Air-conditioner sector, Tobacco sector, Industrial and Commercial Refrigeration and Air Conditioning sector, Fire Extinguisher sector, Household Appliance sector, Cleaning Solvent sector and Foam Sector etc. With more than two decades of hard work, China has completed the phase-out of the production and consumption of CFCs and Halons on 1 July 2007, two and a half years earlier than the phase-out schedule set forth in the Montreal Protocol. By 1 January 2010, except for essential use, China had completely eliminated the production and consumption of CFC, Halons, CTC and TCA (5 years ahead of the schedule) to meet the requirement of Montreal Protocol, which is an outstanding contribution to Ozone Layer protection.

2.2 Evolution of HCFC Phase-out under the Montreal Protocol

HCFCs, which have Ozone Depleting Potential (ODP) up to 15% of that of CFCs, are also classified as controlled substances under Annex-C, Group-I of the Montreal Protocol. HCFCs, therefore, have use restrictions and would eventually have to be phased-out. Initially, for developing countries, the scheduled phase-out date for HCFCs was 1 January 2040 with an interim control measure of freezing HCFC production and consumption at 2015 levels from 1 January 2016.

The XIX Meeting of the Parties to the Montreal Protocol in September 2007, through its Decision XIX/6, adopted an accelerated phase-out schedule for HCFCs. The first control step is to freeze production and consumption of HCFCs from 1 January 2013, at the Baseline Level (average of 2009 and 2010 levels). The second control step is reduction of 10% from the Baseline Levels on 1 January, 2015. Subsequent control steps are 35% reduction by 2020, 67.5% by 2025, 97.5% by 2030 with allowance of 2.5% of baseline for period 2030-2040 and complete phase out from 1 January 2040. The decision also directed the Executive Committee of the Multilateral Fund to assist Article-5 Parties in preparation of HCFC Phase-out Management Plans (HPMP).

2.3 HCFC Phase-out Management Plans in China

There are more than 30 categories of HCFCs controlled by the Montreal Protocol. Currently, only six of them are produced in China: HCFC-22, HCFC-123, HCFC-124, HCFC-133a (mainly used as feedstock), HCFC-141b and HCFC-142b. Six kinds of HCFCs are consumed in China including HCFC-22, HCFC-141b, HCFC-142b, HCFC-124, HCFC-123 and HCFC-225ca/cb and HCFC-225 are imported from foreign market. The production and consumption of HCFCs in China involves 7 sectors: HCFC Production sector, Polyurethane Foam sector, Extruded Polystyrene Foam sector, Room Air Conditioning sector, Industrial and Commercial Refrigeration and Air Conditioning sector, Solvents sector and Servicing sector.

In order to address the Stage I (2011-2015) target in consumption sectors, the HCFC Phase-out Management Plans (Stage-I) for the consumption sector were approved at the 64th and 65th ExCom Meeting in 2011 with funding aggregated US\$270million. In April 2013, the 69th ExCom Meeting approved the HCFC Phase-out Production Sector Management Plan (HPPMP) with a total funding of US\$95 million for the HPPMP (Stage-I) to meet the freeze and 10 percent reduction of baseline in 2015.

Through the implementation of the HCFC Phase-out Management Plans (Stage-I) that includes 7 sector plans, China has successfully meet the 2013 freeze target and is progressing towards 10% reduction in 2015. As of now, the first four funding tranches of the consumption sectors and the first two tranches of HPPMP have been approved and released by the Executive Committee.

2.4 Formulation of China HCFC Phase-out Management Plan Stage-II

The stage I HPMPs in China were implemented smoothly throughout all 6 consumption sectors as well as the production sector. With a combination of conversion projects, policies and regulations, awareness and capacity building activities and monitoring mechanisms that were established, China will surely achieve the 2015 control targets. In 2015 China will submit the last tranche fund request for consumption sectors and the last tranche of production sector is planned to be disbursed to China in 2016 according to the agreement. Looking into the next target of 35% reduction in 2020, China needs to respectively phase out 7,280 ODP tons and 4,716 ODP tons of HCFCs in the production and the consumption sectors at Stage II, which is much higher than the amount of phase out in Stage I. The consistency of phase out strategy and seamlessly transfer is important for China's compliance. Based on detailed consultations with different stakeholders and implementing agencies, it was noted that 2020 targets can only be achieved through a successive phase-out sector plans for all the seven sectors, as identified during Stage-I. In this regard, preparation projects were approved by the ExCom in 2013 to assist China in preparation of 7 HPMPs for stage II (2015-2020). The stage II HPMPs are expected to be submitted to the ExCom in 2016 for consideration. Furthermore, there is a need to have an overarching project for China to integrate and coordinate preparation of all the sector plans under one umbrella at the national level. This will also ensure that the mechanisms for monitoring and reporting can be carried out in an efficient manner and reporting obligations to the Executive Committee are well fulfilled.,

The stage I HPMP in ICR sector aims to phase out 464.8 ODP tonnes HCFC consumption by 2015. Upon completion, the HCFCs consumption in the ICR sector will be reduced to 38,610MT. Stage II HPMP of the ICR sector will address at least 25% of the baseline consumption in addition to the amount phased out in stage I. It means no less than 601ODP tonnes shall be phased out by 2020, equivalent to 10,981MT HCFC-22. Preparation of the stage II HPMP will require further data collection to the industry and in-depth data analysis. The alternative technologies will be reviewed based on new development and policy measure to be proposed for stage II. The HPMP (stage II) proposal will be discussed and consulted among related stakeholders. The HPMP (stage II) will ensure the HCFCs phase out target in the ICR sector to be met by 2020; in addition, it will take into account a climate friendly and sustainable development of the ICR sector in China.

II. STRATEGY FOR FORMULATION OF THE HCFC PHASE-OUT MANAGEMENT PLAN IN THE INDUSTRIAL AND COMMERCIAL REFRIGERATION SECTOR (STAGE II)

The national coordination components of the project: preparation of China's HPMP Stage-II for the Industrial and Commercial Refrigeration sector comprises the following interventions:

- **Coordination and Stakeholders Consultation:** This sub-component will be carried out through coordination and consultation meetings with stakeholders. The coordination meetings will enable good cooperation of all related parties in preparation of the HPMP. The consultation meetings will be held to review data collected and help to analyze the status quo of the ICR sector and discuss the stage II phase out strategy of the ICR sector.
- **Formulation of the HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector (Stage II):** As per the accelerated HCFC phase out schedule, stage II HPMP will address at least 25% of the baseline consumption in addition to the amount phased out in stage I. For ICR sector, it means no less than 601 ODP tons shall be phased out by 2020. In order to develop the stage II HPMP for the ICR sector, the preparation project will cover data survey and data analysis, review of alternative technologies, policy proposals, stakeholders consultation, cost calculation and formulation of the HPMP. Detailed preparation activities are outlined in Annex II.

The work will also involve coordination between the project management teams of the seven sector plans. Every sub-sector will develop the HCFC Phase-out Management Sector Plan (Stage II), the overarching HPMP will include the key results of every sector plan, such as methodologies, work schedule, overall work plans, and the policy review and amendment suggestions to achieve the phase-out targets essential for compliance with the 2020 targets. It must be noted the HPMP (stage II) of ICR sector should take into account the overall phase out arrangement at national level as well the phase out strategy of other relevant sectors, i.e. the Room Air Conditioner sector and the Refrigeration Servicing sector. While preparing the HPMP (stage II) of ICR sector, UNDP and Government of China will coordinate with all other agencies and would draw inputs from them.

III. TIME FRAME/MONITORING MILESTONES

Overall time plan for implementation of the project is given in Table 1 below:

Table 1

MILESTONE/TIME FRAME	Quarters (Q) beginning January 2015					
	2015				2016	
	Q1	Q2	Q3	Q4	Q1	Q2
Coordination and Consultation with Stakeholders						
Coordination with relevant parties						
Consultation meetings with stakeholders						
Survey to the industry, Data analysis, review of alternative technologies, policy proposal, cost calculation and formulation of the HPMP						
Survey to the industry						
Data analysis, review of alternative technologies						
policy proposal, cost calculation and formulation of the HPMP						
Finalization of HPMP stage II						

RESULTS AND RESOURCES FRAMEWORK

Table 2

Applicable Goal (UNDAF):	<p>Outcome: Low carbon and other environment sustainable strategies and technologies are adapted widely to meet China's commitments and compliance with Multilateral Environment Agreements</p> <p>Indicator: Relevant national laws and policies developed or revised for promoting a green economy</p>			
ATLAS Award ID:				
ATLAS Project ID:				
Intended Outputs	Output Targets (2015)	Indicative activities	Responsible Parties	Inputs (US \$)
<p>Output: HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector (Stage II)</p> <p>Indicator: Finalization of the HPMP(stage II) to address the 35% HCFC consumption in the ICR sector by 2020</p>	<p>Targets: March 2015 Finalization and signing of Project Document.</p>	<p>Coordination and Consultation with Stakeholders</p> <ul style="list-style-type: none"> - Coordination meeting with relevant parties - Consultation meetings with stakeholders 	FECO/MEP	45,000
	<p>Targets: August 2015 The first draft of HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector (Stage II)</p> <p>Target: December 2015/January 2016 - submission of the project proposal to the 76th ExCom Meeting</p>	<p>Survey to the industry, Data analysis, review of alternative technologies, policy proposal, cost calculation and formulation of the HPMP</p> <ul style="list-style-type: none"> - Survey to the industry - Data analysis - Review of alternative technologies - Policy proposal and cost calculation - Formulation of project proposal for China for Stage-II HPMP for the Industrial and Commercial Refrigeration Sector 	FECO/MEP	285,000
		Grand total		330,000

IV. ANNUAL WORK PLAN

The table below presents the annual budget allocation during the project life cycle of 2015.

Table 3

AWARD ID							
PROJECT ID							
Project Title	Preparation of the HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector in China(Stage-II)						
Executing Agency	Foreign Economic Cooperation Office, China Ministry of Environmental Protection (FECO/MEP)						
ATLAS Activity	Responsible Party	Source of funds	ATLAS Code	ATLAS Budget Description	2015	2016	Total
Activity 1 : Coordination and Consultation meetings with Stakeholders	FECO/MEP	63080	75700	Training, workshop and conference	3,000	2,000	5,000
	Sub-Total				3,000	2,000	5,000
Activity 2 : Survey to the industry, Data analysis, review of alternative technologies, policy proposal, cost calculation and formulation of the HPMP	FECO/MEP	63080	71400	Contractual Services	30,000	25,000	55,000
	FECO/MEP	63080	71600	Travel	3,000	2,000	5,000
	FECO/MEP	63080	72100	Contractual Services - CRAA	85,000	85,000	170,000
	FECO/MEP	63080	72600	Contractual Services (Project Management for FECO/MEP)	20,000	20,000	40,000
	UNDP	63080	71200	International experts	30,000	7,000	37,000
	UNDP	63080	71600	Travel	12,000	6,000	18,000
		Sub-Total					
	Total						330,000

V. MANAGEMENT ARRANGEMENT

6.1 Implementation Modality

The relevant agreements between Government of China and the ExCom will serve as the framework within which the Preparation Project will be implemented. The project will be managed in accordance with National Execution (NEX) modality. The Government of China through its Foreign Economic Cooperation Office, Ministry of Environmental Protection (FECO/MEP) will be implementing the project with support from UNDP. Under the support of UNDP and FECO, China Refrigeration and Air-conditioning Industrial Association will act as the implementation partner for the project. The Performance Based Payment (PBP) mechanism will be applied to fund disbursements to FECO/MEP in this project in accordance with the MOU between UNDP and FECO/MEP which was signed on 8 January 2011.

6.2 Roles and responsibilities

UNDP is serving as the implementing agency to supervise the implementation of the Preparation Project, specifically including the following:

- Working in close coordinate with FECO/MEP and China Refrigeration and Air-conditioning Industrial Association on the preparation of the HPMP Stage II for the ICR sector;
- Assist in coordination and consultation with stakeholders, especially to raise awareness of the HCFCs phase out schedule of the Montreal Protocol;

- Providing assistance in technology review, especially information on the development of alternative technology in other countries;
- Providing assistance for reviewing the HPMP (stage II) proposal, ensure that the proposal is in line with relevant ExCom rules and decisions;
- Assist in finalization of the HPMP proposal, especially in language and wording;
- Reporting the progress of Preparation Project to the ExCom as per ExCom requirements
- Assist China to submit the HPM P (stage II) proposal to the Secretariat and keep China updated with the progress and feedbacks;
- Cooperate with China in responding to MLF Secretariat's comments on the HPMP(Stage II) proposal;
- Ensuring the Fund disbursed in accordance with the guidelines of the ExCom.

FECO/MEP will be responsible for the overall implementation, coordination and management of the Preparation Project, specifically including the following:

- Coordinating with stakeholders, preparing and organizing the stakeholders coordination and consultation meetings;
- Monitoring the overall progress of the preparation, including data survey and data analysis, review of alternative technologies, policy proposals, stakeholders consultation, cost calculation and formulation of the HPMP;
- Participating in on site survey to enterprises and data analysis as well as technology review to get first-hand information;
- Coordinating between various HCFCs consumption and production sectors to ensure an integrated phase out strategy at national level;
- Ensuring good communication and collaboration among the industry, the implementing agency and other stakeholder;
- Submitting timely output of the preparation project to facilitate fund transfer from UNDP to FECO as stipulated in this project document;
- Coordinating the association to provide inputs to implementing agency in the response to the MLF Secretariat's comments on the HPMP proposals.

CHINA REFRIGERATION AND AIR-CONDITIONING INDUSTRY ASSOCIATION (CRAA) will be engaged by FECO/MEP to act as the implementation partner of the project, the responsibilities are as following:

- Working closely with FECO and UNDP to set up task distribution and timetable for the preparation;
- Collecting and analysing information on HCFC production, consumption, import and export for preparation of the HPMP Stage II for the ICR sector;
- Working together with FECO in organizing and participating in coordination meetings as well as consultation meetings with stakeholders, providing technical consultation;
- Consulting widely with national and international experts, enterprises and other stakeholders on issues such as policy proposals, alternative technology selection, conversion cost etc.;
- Developing HCFC phase-out strategy of Stage II for the ICR sector based on different scenario analysis;
- Formulating the HPMP Stage II for the ICR Sector including HCFC phase-out strategy of Stage II, policy and regulation framework, alternative technology selection, environmental effects, cost calculation and action plans etc.;
- Assist FECO and UNDP in responding Secretariat's questions and comments of the HPMP proposals.

6.3 Payment Schedule and Indicators

Fund Allocation
Table 4

Cost Component	Funding Request (US\$)
Coordination and Consultation meetings with Stakeholders	45,000
Survey to the industry, Data analysis, review of alternative technologies, policy proposal, cost calculation and formulation of the HPMP	285,000
Total	330,000

Performance-Based Payment (PBP) Schedule to FECO/MEP

Table 5

Payment (Indicative)	Disbursement (US\$275,000)	Indicators/Milestones
First disbursement	30% of fund (US \$82,500)	- Project Document is finalized and signed between FECO/MEP and UNDP.
Second disbursement	50% of fund (US \$137,500)	- Submission of meeting minutes of the first coordination meeting; - Signature of agreement between FECO and CRAA
Third disbursement	20% of fund (US \$55,000)	- Finalized HPMP (Stage II) for ICR sector - Confirmation letter of FECO for submission of project proposal to ExCom
Total	US \$275,000	

VI. MONITORING FRAMEWORK AND EVALUATION

7.1 Monitoring & Verification

The activities of Monitoring & Verification include the following:

a) Financial Audit:

In accordance with the agreement between UNDP and the Chinese Government, an annual financial audit on UNDP National Execution (NEX) projects in China will be conducted by an independent auditor. According to the agreement, if the project achieved the annual expenditure exceeded the UNDP defined minimum the project will participate in the financial audit. The project will be audited at least one time during its project life cycle. The financial audit aims to verify:

- If the project fund has been appropriately applied which are in line with the Project Document between UNDP and FECO.
- If the project fund has been appropriately disbursed. If the project has achieved certain progress which are defined in the project document and the annual work plan.

The invited auditing agency will formulate an auditing report to UNDP China Country Office and share with FECO/MEP. If there are any qualified issues which are verified in the financial audit, the related payment will be suspended until the issues to be worked out by the responsible parties and accepted by UNDP.

b) Review Meetings

Two official review meetings between UNDP and FECO/MEP will be conducted in the year, one of them to be arranged prior to the submission date of HCFC Phase-out Management Plan (Stage II). The objective of the meetings will be to review progress of the preparation project.

c) Monitoring & Evaluation

Monitoring will include a continuous review of the various project components and will be intended to (i) measure the progress towards meeting the overall project objectives and (ii) alert implementing partners to potential problems in implementation and propose corrective measures. Monitoring visits can be undertaken by UNDP on annual basis. Such visits could be done in connection with the official meetings to be held between partners. An independent expert, if necessary, could be invited to join the visit.

7.2 Quality Management for Project Activity Results

OUTCOME: Finalized HCFC Phase-out Management Plan for the ICR in China (Stage-II)		
Output: The following activities contribute to achieving the above outcome.		
<ul style="list-style-type: none"> • Organization of coordination meeting and consultation meetings with stakeholders; • Development and implementation of monitoring and coordination. • Planning, review & reporting on project implementation. • 		
Result 1	The stakeholders well informed of stage II phase out target, the phase out strategy of ICR sector were coordinated through coordination meetings.	Start Date: Mar. 2015 End Date: Jun. 2016
Purpose	Coordinate with national stakeholders/partners on the preparation of HPMP(stage II) for the ICR sector	
Description	<ul style="list-style-type: none"> • Coordination with stakeholders and partners on regular basis. • Organization of national coordination and consultation meetings as necessary. • Finalization of meeting minutes. 	
Quality Criteria	Quality Method	Date of Assessment
National stakeholder coordination meeting organized	Meeting minutes	No later than November 2015
Result 2	The HPMP (Stage II) proposal for the ICR sector was finalized	Start Date: Mar. 2015 End Date: Jun. 2016
Purpose	Ensuring timely submission of HPMP for the ICR sector(Stage II)	
Description	<ul style="list-style-type: none"> • Surveys to industry carried out; • In-depth analysis of data and review of alternative technology; • Policy review and proposals; • Draft HPMP based on scenario analysis; • Coordinate among other sectors at national level to ensure the phase out strategy in ICR sector is in line with overall program; • Efficient consultation and coordination among stakeholders to finalize the HPMP. 	
Quality Criteria	Quality Method	Date of Assessment
The activities are conducted on time and the documents are timely submitted.	HPMP(Stage II) for the ICR sector	Submission to the 76 th Executive Committee Meeting in 2016. No later than June 2016.
National coordination provided	Local experts involvement	June 2016.
Good communication and collaboration with implementing agency	Implementing agency involved	June 2016.

VII. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement (SBAA) between the Government of the People's Republic of China and the United Nations Development Programme, signed by the parties on 29 June 1979.

Consistent with the Article III of the SBAA, the responsibility for the safety and security of the executing agency and its personnel and property, and of UNDP's property in the executing agency's custody, rests with the executing agency.

The executing agency shall:

- put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
- Assume all risks and liabilities related to the executing agency's security, and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The executing agency agrees to undertake all reasonable efforts to ensure that none of the UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

In addition, the following types of revisions may be made to this Project Document with the signature of the UNDP resident representative only, provided he or she is assured that the other signatories of the Project Document have no objections to the proposed changes:

1. Revision in, or addition of, any of the annexes of the Project Document;
2. Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation; and
3. Mandatory annual revisions that rephrase the delivery of agreed project inputs, or reflect increased expert or other costs due to inflation, or take into account agency expenditure flexibility.

VIII. ANNEX

ANNEX-I: RISK ANALYSIS

ANNEX-II: Final version of the project proposal for Preparation of HCFC Phase-out Management Plan for the Industrial and Commercial Refrigeration Sector (Stage II) submitted and approved at the 73rd Executive Committee Meeting, with funding approval at US \$330,000

ANNEX-I

RISK ANALYSIS

Description	Date identified	Type	Impact and Probability (Low 1 to High 5)	Counter Measures	Owner
Insufficient coordination with stakeholders	Project initiation date	Operational	Probability - 2 Impact - 4	Strengthen coordination meetings and regular meeting with association; involve in site visit to enterprises.	FECO/MEP
Delay in completion of project deliverables such as national stakeholder coordination meetings, the finalized HPMP proposal	Project initiation date	Operational	Probability - 3 Impact - 4	Close coordination with FECO/MEP and periodic monitoring of project tasks; Facilitating timely completion of tasks.	FECO/MEP, UNDP
Inefficient communication during project implementation	Project initiation date	Operational	Probability - 2 Impact - 4	Strengthen email communication as well as regular meetings;	FECO/MEP, UNDP

ANNEX-II

PEOPLE'S REPUBLIC OF CHINA PREPARATION OF INDUSTRIAL AND COMMERCIAL REFRIGERATION SECTOR PLAN (STAGE II – For compliance with 2020 target)

1. Background

At the 19th Meetings of the Parties of the Montreal Protocol held in September 2007, it was agreed that the HCFC phase out will be accelerated. According to the new schedule, China will have to freeze the production and consumption of HCFCs at the average level of 2009 - 2010 (baseline) by 2013, and to realize 10%, 35%, 67.5% reductions in 2015, 2020 and 2025, respectively, and achieve complete phase-out of HCFCs by 2030 with a 2.5% remaining allowed production and consumption of HCFCs to meet the residual demand in the servicing sector during the period of 2030-2040.

In cooperation with UNDP, China prepared the stage I (2011-2015) Sector Plan for Phase out of HCFCs in the Industrial and Commercial Refrigeration Sector. The stage I HPMP in ICR sector was approved at the 64th ExCom meeting with funding of US\$61million. The objective of the stage I HPMP is to ensure that the HCFC consumption in the ICR sector is frozen on an average level of 2009-2010(baseline) by 2013 and reduce 10% from baseline by 2015. To realize these targets, the sector plan covers production line conversion, policy-making and technical assistance activities. Based on data surveys and industry development assumptions, around 8,450 MT of HCFC consumptions, equivalent to 465 ODP tons will be phased out in the ICR sector by 2015.

Upon achieving the first stage target, the HCFC phase-out programs in China will not stop. The industries will move on to the next goal of reducing 35% by 2020. The stage II HPMP will be prepared to address the targets and activities from 2015 to 2020. A preparation project is proposed to help the ICR sector preparing for the HPMP. This document presents the intended coverage, time-lines and costs for the preparation of Stage II HPMP in ICR sector.

2. Sector background and coverage

2.1 Sector background

The industrial and commercial refrigeration and air-conditioning sector develops quickly in China. By 2013, the total industrial output of ICR sector values about 560 billion Yuan. The ICR sector is well diversified by many types of products in different applications. It is estimated that there are more than 1,000 manufacturing enterprises in this sector and most of them SMEs.

The ICR sector is experiencing a fast growth due to the increased market demand. The production increased by more than 10% each year from 2008. The average HCFCs consumption in this sector in 2009-2010 is about 43,900MT. In 2011, the consumption reached 47,515MT.

After the stage I HPMP was approved in July, 2011, HCFC phase out were proceeded with approaches including production line conversion, conversion of compressor production, technology assistance activities, and Quota management and information dissemination. With the implementation of the HPMP and enforcement of policies, the increasing trend of HCFC consumption in ICR sector was restrained. In 2012, the consumption has decreased slightly to 46,842 MT.

2.2 Challenges facing the phase-out

The HCFC consumption in the ICR sector has been properly controlled by carrying out of conversion projects, collaborating with policy measures as well as technical assistance activities. It is foreseeable that the 10% reduction will be realized in 2015. But as conversion continues, challenges become even greater. Firstly, it is difficult to motivate the SMEs to involve in conversion. In stage I, 80% of the conversion took place in large companies. These companies have strong R&D capability and diversified products with multiple production lines. Conversion to them is much easier in terms of technology innovation and it has little impact to the

companies' business. But for SMEs, most of them supply a single type of refrigeration equipment for a specific application. The market for their products is very small and numbers of supplier is limited. These companies do not have their own R&D. It is difficult for them to look for appropriate alternative technologies. They always have the fear that the uncertainty of conversion will drive them out of the market. Secondly, policy obstacles to new alternatives need to be solved. Great importance has been attached to standards revision and establishment in stage I. But the flammability of some alternative refrigerants has attracted much attention. The standard revision involves many government authorities. A lot of collaboration and explanation are needed, particularly for equipment with large refrigerant consumption which needs safety matters addressed. Last but not the least, there are still problems with alternative technologies. Government and industries are becoming more cautious to HFC refrigerants such as R410a and R134a due to their high GWP value and the fate of being abandoned someday. Tremendous researches and experiments will have to be done to break through the traditional technical difficulties of natural refrigerants. One also needs to examine the cost increase while adopting low-GWP technologies to ensure cost-competitiveness of the products.

2.3 Target of Stage II HPMP in ICR sector

As per the accelerated HCFC phase out schedule, stage II HPMP will address at least 25% of the baseline consumption in addition to the amount phased out in stage I. For ICR sector, it means no less than 601 ODP tons shall be phased out by 2020.

2.4 Preparation of Stage II HPMP

In order to develop the stage II HPMP for the ICR sector, the preparation project will cover data survey and data analysis, review of technologies, policy framework, stakeholders consultation, cost calculation and formulation of the HPMP.

a) Surveys to the industry

Based on data and information collected in stage I, a complementary data survey in stage II will pay more attention to sub-sectors such as freezers and cold chain. Survey will be carried out to 80-100 enterprises. The survey will be conducted through field visit and questionnaires. The field survey will cover at least 30 enterprises, in depth, to understand: 1) HCFC consumption in the past three years; 2) main products and production growth in the past three years; 3) alternative technologies they are willing to use in future.

b) Data analysis

The collected data will be analyzed. Data analysis will focus on 1) HCFC consumption trend; 2) consumption distribution in different sub-sectors; 3) location and geographic distribution of enterprises; 4) numbers of enterprises in the sector and in each sub-sectors; 5) numbers of production lines in the sector and in each sub-sector.

c) Review of alternative technologies

The technologies used in stage I conversion will be summarized and reviewed. A review report shall be produced to reflect 1) technology selection in stage I; 2) technology application in different products; 3) problems and challenges in using the alternative technology.

Based on the review report, workshops will be organized to evaluate different alternative technologies and recommend technology options for Stage II.

d) Policy framework

The existing national and local policies will be reviewed. New policies and regulations required for facilitating HCFC phase-out in ICR sector will be proposed.

e) Stakeholders meetings

Stake holders meetings will be convened along with the preparation progress to review and discuss: 1) Data collected and data analysis. 2) Technology review and technology selection for stage II; 3) phase out strategy for stage II; 4) Project implementation modality 5) Cost calculation for stage II phase out activities.

f) **Cost calculation and formulation of HPMP**

The cost for stage II phase out will be calculated based on phase out strategy. Cost calculation will take into account different alternative technologies and scales of enterprises. The stage II HPMP will be formulated based on the cost calculation.

3. **Timelines for preparation**

The preparation of the ICR HPMP (stage II) will be completed in 12 months. The HPMP is planned to be drafted in December, 2015 and send for consideration to the 76th ExCom meeting in 2016.

	Q1	Q2	Q3	Q4
Inception meeting	X			
Field survey planning	X	X		
Data collection		X	X	
Data analysis			X	
Project preparation				X
Stakeholder consultations	X	X	X	X
Project document finalization				X

4. **Project costs and break-down**

The following table summarises the total costs for preparation of ICR sector plan for completing the above mentioned tasks.

Component	Particulars	Cost in USD
Workshops/ meetings	Inception/ stakeholder consultations on technology issues/finalization	50,000
Project development, data collection and analysis	Field survey for data collection, data analysis, technology options assessment including technical support, project development and implementation plan development including support during stakeholder consultations	240,000
Management, communications and miscellaneous	Travel for FECO staff for preparation, communication, printing including outreach and other miscellaneous costs	40,000
	Grand total	330,000