

**GOVERNMENT OF THE KYRGYZ REPUBLIC  
UNITED NATIONS DEVELOPMENT PROGRAMME**

**PROJECT DOCUMENT**

**KYR/PHA/74/INV/34 – HCFC phase-out management plan, stage II**

<b>UNDAF Outcome/Indicator:</b>	Pillar c: Inclusive and Sustainable Job-Rich Growth for Poverty Reduction. Outcome 2: By end of 2016 sustainable management of energy, environment and natural resources practices operationalized.
<b>Expected Outcome/Indicator:</b>	% reduction in consumption of HCFCs- Hydro chlorofluorocarbons 97.5% reduction since 2020
<b>Expected CP Outcome(s):</b>	Sustainable development principles integrated into poverty reduction policies and programmes.
<b>Expected CPAP Output(s):</b>	Increased institutional capacity to implement international conventions and agreements.
<b>Implementing agency:</b>	UNDP in the Kyrgyz Republic
<b>Implementing partner:</b>	National Ozone Center under State Agency on Environment Protection and Forestry under the Government of the Kyrgyz Republic

**Brief description:**

The HCFC Phase-out Management Plan (TPMP) strategy contemplates phase out schedule in line with the Decision XIX/6 requirements. The first stage of HPMP which is presented will effectively target reaching the freeze by 2013 and 10% reduction of baseline phase out level by 2015.

This HCFC Phase out Management Plan (HPMP) documents the analysis and actions proposed by the government of the Republic of Kyrgyzstan in respect to meeting the obligations assumed under Decision XIX/6 of the Parties to the Montreal Protocol on the accelerated phase of HCFC's. It has been prepared by the National Ozone Unit with the support of UNDP acting as implementing agency. The project will be implemented by UNDP as a lead agency and UNEP as a cooperating agency. It is intended to serve as an integral component of the country's policy and commitment to meet its obligations under the Montreal Protocol.

The overall strategic objectives associated with the Stage 2 are:

Stage 2: To sustain the progressive reduction in consumption reduction to a level of 2.87 ODP (52.2 tons HCFC-22) in 2020, 1.44 ODP tons (26.1 tons HCFC-22) in 2025 and effectively zero in 2030.

- To the maximum degree practical utilize technologies that minimize climate change impacts.
- To accomplish the above in such a way as to minimize economic and social impacts, particularly in vulnerable sectors and portions of the population.

**Programme Component:** Environment and Energy  
**Project Title:** HCFC Phase-out Management Plan  
**Project ID:** 00097155  
**Project Duration:** 2015-2020  
**Management Arrangement:** NIM

<b>Total budget:</b>	<b>400,000 USD</b>
Government:	N/A
Regular:	N/A
Donor – MLF:	400,000 USD
In kind:	N/A

Signature:

Date:

Agreed by UNDP:

Mr. Alexander Avanesov, Resident Representative



Agreed by Implementing Partner:

Mr. Mars Amanaliev, Head of National Ozone Center



**MULTILATERAL FUND FOR THE IMPLEMENTATION OF THE  
MONTREAL PROTOCOL ON SUBSTANCES THAT DEplete THE OZONE LAYER**

**HPMP SUBMISSION CHECKLIST**

**BASIC INFORMATION**

Country:	Kyrgyzstan
Project Title:	HCFC Management Plan for Kyrgyzstan (Stage 2)
Lead Agency:	UNDP
Cooperating Agencies:	UNEP

**MONTREAL PROTOCOL AMENDMENT RATIFICATION STATUS**

Amendment	Ratified (Y/N)	Date
Copenhagen Amendment	Yes	May 5, 2003
Beijing Amendment	Yes	May 10, 2005

**HCFC DATA**

Article-7 data reported	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Year: 2013
CP progress data reported	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Year: 2013
Calculated HCFC baseline (ODP tonnes)	4.1	
Starting point (ODP tonnes)	4.1	

**DOCUMENTATION**

Document	Submitted (Y/N)	Remarks
Letter of transmittal	Yes	
HPMP document and components	Yes	
Draft agreement	Yes	
MYA online tables	In process	Stage II not in the system
Technical review (where applicable)		

**HPMP SCOPE**

Sectors covered	<input type="checkbox"/> Manufacturing only <input checked="" type="checkbox"/> Servicing only <input type="checkbox"/> Manufacturing and Servicing
Phase-out targets	<input type="checkbox"/> Freeze and 10% reductions (2015) <input type="checkbox"/> 35% reductions (2020) <input checked="" type="checkbox"/> Complete phase-out (Year:2020) <input type="checkbox"/> Other
Priority given to reductions/phase-out in manufacturing (over servicing)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not required/applicable
Justification for not prioritizing HCFC-141b	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not required/applicable

**HPMP COMPONENTS**

Components	Included (Y/N)	Remarks
Executive Summary	Yes	
Overarching Strategy	Yes	
Strategy and action plan for Stage-II	Yes	
Sector plans/individual projects	No	Servicing sector only
Annual implementation plan	Yes	
Implementation arrangements	Yes	
Environmental Impact	Yes	

**HPMP FUNDING**

Components	Included (Y/N)	Remarks
Consistency with guidelines (for servicing sector, cut-off date, second conversions, HCFCs in preblended polyols, technology upgrade, non-A5 ownership, non-A5 exports)	Yes	
Funding for first tranche requested	Yes	
Funding for last tranche in last year	No	

## **Executive Summary**

This HCFC Phase out Management Plan - Phase 2 (HPMP-II) documents the analysis and actions proposed by the government of the Kyrgyz Republic in respect to meeting the obligations assumed under Decision XIX/6 of the Parties to the Montreal Protocol on the accelerated phase of HCFCs.

It has been prepared by the National Ozone Center (NOC) with the support of UNDP acting as lead implementing agency and UNEP as a cooperating agency, and has gone through national stakeholder consultation process to agree on the format of MLF assistance needed to accomplish HCFC phase-out. It is intended to serve as an integral component of the country's policy and commitment to meet its obligations under the Montreal Protocol.

The HPMP-II documents a detailed survey and assessment of HCFC consumption in the country along with trends in and a forecast of this consumption. The results indicate that Kyrgyzstan currently consumes (2013) an estimated 3.99 ODP tons/year of HCFCs, in the form of HCFC-22 – 56.8 tons/year, and 10.3 tons/year of HCFC-142b – the latter recorded as a single-time consumption for foam blowing. Consumption of HCFC-22 is purely in the refrigeration servicing sector (46.5 tons/year).

The survey work also documented the current regulatory regime governing ODS, and HCFCs in particular, as well as institutional capacity to manage their import, distribution and use. In that regard, Kyrgyzstan has identified availability of adequate human resource and procedural capability related to customs controls and refrigeration servicing as a critical barrier to its ability to comply with accelerated phase out requirements.

Overall, Kyrgyzstan's HCFC phase-out strategy contemplates a phase-out schedule in line with the Decision XIX/6 requirements, and is influenced by Kyrgyzstan joining the Customs Union with the Russian Federation, Kazakhstan, Belarus and Armenia – a form of regional economic and trade integration of these partner countries with common Customs area, where acceleration of the HCFC phase-out is required in line with non-Article 5's HCFC schedules. Therefore, the second stage of HPMP, which is presented, will effectively target reaching the complete phase out of HCFCs by 2020.

The document details an overall strategy for meeting the required phase out schedule. This is elaborated as a detailed action plan in a number of areas.

A menu of regulatory and administrative control measures are outlined including imposition of mandatory quotas on the import of HCFCs, as well as other important measures related to controlling import of HCFCs. Proposed non-investment activities support a range of actions related to enhancing customs control practices and most critically the availability and capability of refrigeration servicing technicians, through trainings, and strengthening of coordination and enhanced reporting. Such activities are planned for the period of 2015-2020. Furthermore, it is proposed to continue strengthening the servicing sector through supply of basic recovery equipment to qualified technicians, training equipment to vocational schools and training centers, and improving HCFC distribution, and demonstration of alternative technologies.

The overall remaining incremental cost as capped by decision 60/44 for this HPMP is US\$ 712,000.

Details of this funding are summarized in the following table:

IA		Project	Total	Tranche 1	Tranche 2	Tranche 3
Non-investment Components	UNEP	Legal and Regulatory Action				
		Regulatory updates in HCFC control frameworks	\$ 96,000	\$ 52,700	\$ 43,300	-
		Technical Capacity Building				
		Strengthening capacity in prevention of illegal trade	\$ 81,000	\$ 40,000	\$ 41,000	-
		Strengthening capacity in the refrigeration sector	\$106,000	\$ 45,400	\$ 60,600	-
		Monitoring of activities	\$ 29,000	\$ 11,900	\$ 10,900	\$ 6,200
Sub-Total UNEP			\$312,000	\$ 150,000	\$ 155,800	\$ 6,200
Investment Components	UNDP	Vocational training capacity and HCFC management, re-use and distribution system				
		R/R/R equipment/tools supply for servicing sector	\$ 80,000	\$ 70,000	\$ 5,000	\$ 5,000
		Training equipment/tools to training centers/schools	\$120,000	\$ 80,000	\$ 20,000	\$ 20,000
		HCFC manual distribution system	\$ 20,000	\$ 20,000	-	-
		Demonstration of alternative technologies through retrofit/replacement and local assembly of imported components				
		End-user awareness and incentive component	\$90,000	-	\$ 60,000	\$ 30,000
		Demonstration of alternatives via local assembly	\$90,000	-	\$ 90,000	-
Sub-Total for UNDP			\$400,000	\$ 170,000	\$ 175,000	\$ 55,000
	Sub-Total UNEP	\$312,000	\$ 150,000	\$ 155,800	\$ 6,200	
	Sub-Total UNDP	\$400,000	\$ 170,000	\$ 175,000	\$ 55,000	
	Support cost UNEP (13%)	\$40,560				
	Support cost UNDP (9%)	\$36,000				
	Grand Total UNEP	\$351,776				
	Grand Total UNDP	\$436,000				

It should be noted that the country chooses to receive institutional strengthening assistance outside of this HPMP, as was the case in the past.

## Table of Contents

Executive Summary	3
List of Abbreviations and Acronyms	6
List of Tables and Figures	7
1.0 General Information	8
1.1 Scope and Context	8
1.2 Country Profile	9
1.3 History and Status of ODS Phase Out	14
1.4 Summary of Phase Out Measures and Process to Date	16
1.5 Lessons Learned	20
2.0 Description of Existing Policy, Legislative, Regulations and Institutional Framework	23
2.1 General Policy and Regulatory Framework	23
2.2 National Institutional Arrangements for ODS Issues	23
2.3 Implementation of the Licensing System and Application of Quotas	24
2.4 Measures respecting HCFCs	25
2.5 Stakeholder Involvement in the Policy and Regulatory Regime	25
3.0 Data Collection and Surveys	26
3.1 Survey Methodology and Approach	26
3.2 HCFC Supply and Import/Export Profile	30
3.3 Current HCFC Consumption	31
3.4 Forecast HCFC Consumption	32
3.5 Data Validation	38
3.6 Availability of HCFC Alternatives and Prices	38
4.0 Strategy and Plan for the Implementation of HCFC phase out	40
4.1 Strategy Framework and Rationale	40
4.2 Description of HPMP Action Plan and Activities	42
4.2.1 Non-Investment Component (UNEP): Legal/Regulatory Commitments, Technical Capacity Strengthening and Monitoring	
4.2.2 Investment Component (UNDP): Improved HCFC Management and Alternatives Demonstration Projects	
4.2.3 HPMP Stage 2 Tranche 1 Activities Break-Down by UNEP and UNDP	
4.2.4 Climate and Sound Chemicals Management Considerations	
4.2.5 HPMP Action Plan Timetable	
4.3 Project Coordination and Management	48
<b>Annexes</b>	
Annex 1.1 Diagrams of GDP Dynamics of for Kyrgyz Republic	50
Annex 1.2 Listing of Information Products, Publications and Awareness Events	53
Annex 1.3 Summary of ODS Related Legislation, Resolutions, Regulations, Endorsements	54
Annex 1.4 Lists of Controlled ODS and ODS Containing Products	
Annex 1.5 Survey Form	56
Annex 1.6 Dynamics of ODS consumption from 1995 to 2013	58
Annex 1.7 Proposed HPMP Action Plan Implementation Schedule	61
Annex 1.8 Draft Government – Executive Committee Agreement	62

### **List of Abbreviations and Acronyms**

A/C	Air Conditioner
ADB	Asian Development Bank
CFC	Chlorofluorocarbons
CIS	Commonwealth of Independent States
EU	European Union
ExCom	Executive Committee of the Multilateral Fund for the Implementation of the Montreal Protocol
FAO	Food and Agricultural Organization
GEF	Global Environmental Facility
GDP	Gross Domestic Product
GWP	Global Warming Potential
HCFC	Hydrochlorofluorocarbons
HFC	Hydrofluorocarbons
HPMP-1	HCFC Phase Out Management Plan –Phase 1
HPMP-2	HCFC Phase Out Management Plan –Phase 2
kW	Kilowatt
IBRD	International bank for Reconstruction and Development
LVC	Low Volume Country
MAC	Mobile Air Conditioning
MLF	Multilateral Fund for the Implementation of the Montreal Protocol
MP	Montreal Protocol
NOC	National Ozone Centre
ODP	Ozone Depleting Potential
ODS	Ozone Depleting Substance
OEC	Organization of Economic Cooperation
OSCE	Organization for Security and Cooperation in Europe
PIC	Prior Informed Consent
RAC	Refrigeration and Air Conditioning
RMP	Refrigerant Management Plan
TEAP	Technology and Economic Assessment Panel
UNEP	United Nations Environmental Programme
UNDP	United Nations Development Programme
WB	World Bank

## 1.0 General Information

### 1.1 Scope and Context

The Phase 2 of the HCFC Phase-out Programme (hereinafter – HPMP-II) covering 2015 thru 2020 was developed to ensure compliance with obligations of the Kyrgyz Republic arising from the Vienna Convention for the Protection of the Ozone Layer (Vienna Convention) and the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol). This Programme (Phase 2) is a continuation of HPMP-I that has been active for the period 2011-2014.

The Government of the Kyrgyz Republic, actively supporting the efforts of the international community to address global environmental challenges for the preservation of the ozone layer, fully committed itself to meet the requirements of the Montreal Protocol and its amendments.

**Table 1.1. Status of ratification<sup>1</sup>**

COUNTRY	Signature Vienna Convention	Signature Montreal Protocol	Vienna Convention	Montreal Protocol	London Amendment	Copenhagen Amendment	Montreal Amendment	Beijing Amendment
TOTALS	28	46	197	197	197	197	195	193
1. Kyrgyzstan	-	-	31.05.2000 Ac	31.05.2000 Ac	13.05.2003 R	13.05.2003 R	13.05.2003 R	05.10.2005 R
TOTALS	28	46	197	197	197	197	195	193

Pursuant to the obligations of the Kyrgyz Republic according to present international agreements, the Law of the Kyrgyz Republic "On Protection of the Ozone Layer" from 18 December 2006 # 206 was adopted.

Resolution of the Government of the Kyrgyz Republic "On termination of the use of ozone-depleting substances" from July 11, 2008 # 374 was adopted, where Phase 2 of the Country Programme was approved, the Interdepartmental Commission on Ozone was approved, from 1.09.2008, there is a ban on the import of methyl bromide, except for quarantine treatment of products and quarantine pre-shipment, from 06.01.2008 there is a ban on imports of halons, except for certain applications (civil aviation, military equipment), as well as equipment containing and/or using halons.

Resolution of the Government of the Kyrgyz Republic "On approval of the state regulation of import and export of ozone-depleting substances and products containing them" from September 19, 2009 # 534, where the new edition of the Regulation on state regulation of import and export of ozone-depleting substances and products containing them.

This current HPMP-II was developed in accordance with the format of the Executive Committee of the Multilateral Fund of the Montreal Protocol on the basis of analysis of current consumption of ozone-depleting substances by various industries and sectors of the country.

HPMP-II includes specific actions aimed at assisting the Government of the Kyrgyz Republic and specific institutions on substitution and economical use of ozone-depleting substances and is the main instrument for monitoring consumption, and re-sue of ODSs, and in particular HCFCs, and also defines a system for monitoring of action to implement projects.

It should be noted that the proposed HPMP document (Phase 2) has been prepared assuming new circumstances that influence the current Kyrgyzstan's HCFC phase-out, applied through the Eurasian Economic Community and its Customs Union with the Russian Federation, Kazakhstan, Belarus and Armenia stipulating non-Article 5 HCFC phase-out schedule in line with the Montreal Protocol, which is more accelerated than that of Article 5 countries.

<sup>1</sup> [http://ozone.unep.org/new\\_site/en/treaty\\_ratification\\_status.php?treaty\\_id=&country\\_id=92&srchcrit=1&input=Display](http://ozone.unep.org/new_site/en/treaty_ratification_status.php?treaty_id=&country_id=92&srchcrit=1&input=Display)

This regional organization of integration of the economic and trade operations in the participating countries involves common economic activity and Customs area, and removes taxation tariffs and economic constraints on economic activities within its coverage area. It dates back to 1994, when this original idea was first presented by Kazakhstan and then supported by several countries of the former Soviet Union's area. In 2011, the Russian Federation, Kazakhstan and Belarus endorsed the establishment of the Eurasian Economic Commission that was in charge of controls over 170 economic processes of the participating countries.

This document has been prepared to define the Government of the Kyrgyz Republic's commitment, plan and resource requirements to meet the obligations that it assumed as a Party to the Montreal Protocol under Decision XIX/6<sup>2</sup> of the Nineteenth Meeting of the Parties to the Montreal Protocol which accelerated the phase out of hydrochlorofluorocarbons (HCFCs) in both Article 5 and non-Article 5 countries. Furthermore, it intends to fulfill the requirements of the Executive Committee (ExCom) of the Multilateral Fund for the Implementation of the MP (MLF) respecting adoption and submission of HCFC Phase-out Management Plan (HPMP) applied to Article 5 countries seeking MLF financial support in meeting these obligations.

This HPMP has been prepared by the National Ozone Center (NOC) with the financial support of the MLF and with UNDP acting as lead implementing agency, and UNEP as cooperating agency. It has been developed in accordance with the guidance issued by Executive Committee (ExCom), specifically the document UNEP/OzL.Pro/ExCom/54/53<sup>3</sup> and ExCom Decisions 54/39<sup>4</sup> and 60/44.

For purposes of the HPMP, Kyrgyzstan is categorized as a Low Volume Country (LVC). Historically, ODS and specifically HCFC consumption has occurred almost entirely in the refrigeration servicing sector and has been almost exclusively HCFC-22. Therefore in a global context, Kyrgyzstan would generally be considered a "servicing only" country. However, some consumption of HCFCs in manufacturing existed in the form of HCFC-based products using HCFC-141b polyols and HCFC-22/142b mixture used in manufacturing of foam based products and components, with no current national needs for requesting assistance from MLF for such phase-out.

## **1.2 Country Profile**

### **1.2.1 Geography**

The Kyrgyz Republic is located in the centre of the Asian continent, in the north-east of Central Asia between 39° and 43° north latitude and 69° and 80° east longitude. The Republic borders on Kazakhstan in the north, on China in the south-east and east, on Tajikistan in the south-east, and on Uzbekistan in the west. The length of the Kyrgyzstan's borders is 4,508 km, its total area is 199,900 km<sup>2</sup>. The country is divided on 9 administrative units: 7 regions (Batken, Djalal-Abad, Issyk-Kul, Naryn, Osh, Talas and Chui) and its two major cities, Bishkek and Osh are also standalone administrative units.

The highest point in the country is Pobeda peak (7,439 m) and the lowest is 350 m above the sea level. About 94% of the territory is located above 1,000 m, 90% - above 1,500 m, and 40% - above 3,000 meters above sea Level. Figure 1.1 provides a map illustrating elevations. The countries predominantly high mountain ecological system generally define the country's the climate, landscapes, soils, water resources, flora and fauna, as well as social and economic conditions of life. It also creates conditions susceptible to natural and anthropogenic influence, including earthquakes, landslides, mudflows, floods and avalanches.

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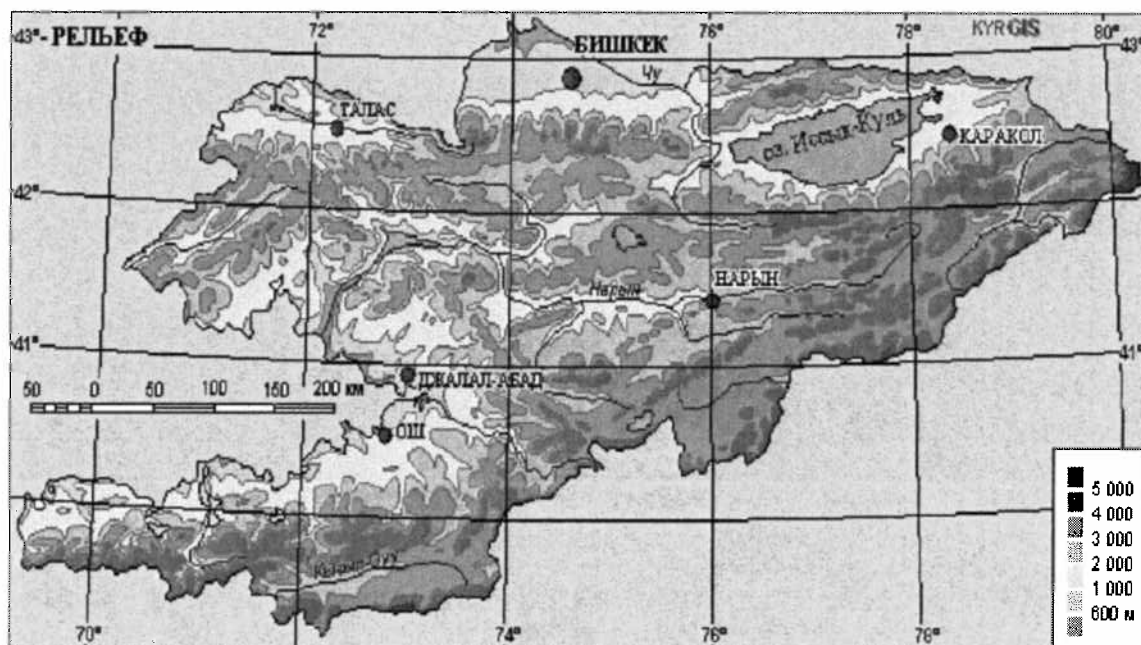
<sup>2</sup> [http://ozone.unep.org/Meeting\\_Documents/mop/19mop/MOP-19-7E.pdf](http://ozone.unep.org/Meeting_Documents/mop/19mop/MOP-19-7E.pdf), Page 33

<sup>3</sup> <http://www.multilateralfund.org/files/54/5453.pdf>,

<sup>4</sup> <http://www.multilateralfund.org/files/54/5459.pdf>, Page 43, Annex XIX



**Figure 1.1: Kyrgyzstan: Physical Map**



### 1.2.2 Climate:

The Kyrgyz Republic is a typical high mountain country with generally arid continental climate and large temperature range. Four climatic zones are clearly distinguished: North and Northwest Kyrgyzstan, Southwest Kyrgyzstan, the Issyk-Kul basin, and the Internal Tien-Shan. Up to four vertical climatic zones can be distinguished: lowland (from 500-600 to 900-1,200 m above sea level), middle mountain (from 900-1,200 to 2,000-2,200 m), high mountain (from 2,000-2,200 to 3,000-3,500 m), and nival (3,000-3,500 and above). The principle climatic characteristics of the main valleys where 75% of the population along with countries main agricultural and industrial production is located are featured in Table 1.2.

**Table 1.2 Climatic Characteristics of Principle Valleys**

Valley	General Location	Annual Precipitation (mm)	Temperatures °C	Other Features
Chui	North West	300-500 Mainly Spring/Fall	Average Summer: 24.4 High Summer: 43 Average Winter -5 Low Winter: -38	High westerly winds
Fergana	South West	100-120 (central) Up to 500 (west)	Average Summer: 25.4 High Summer: 38 Average Winter -3.4 Low Winter: -29	Hot dry climate
Issyk-Kul	North East	120-450	Average Summer: 18.2 High Summer: 34 Average Winter -4.5 Low Winter: -23	Impact of Lake Issyk-Kul
Talas	North West	300	Average Summer: 20.3 High Summer: 40 Average Winter -7.5 Low Winter: -38	Geographically isolated

Naryn	South Central	200-500	Average Summer:12.5 High Summer:35 Average Winter -17.1 Low Winter: -35	Long and narrow
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The following illustrates information on historical average temperature regime in the country throughout the year that indicates that high-temperature periods in summer and low-temperature periods in winter times are normal due to prevalent continental climate.

**Table 1.3 Temperature parameters of Kyrgyzstan**

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
<b>Absolute max °C</b>	19.2	25.3	30.5	34.7	35.6	40.9	42.8	39.5	36.8	34.1	27.9	23.3	42.8
<b>Average max °C</b>	3,2	4,9	11.2	18.5	<b>23.6</b>	<b>29.0</b>	<b>31.7</b>	<b>30.9</b>	<b>25.5</b>	17.8	11.0	5,0	17.7
<b>Average temp °C</b>	-2,6	-0,8	5,3	12.3	17.4	22.4	24.9	23.8	18.5	11.0	4,7	-0,9	11.3
<b>Average min °C</b>	-7,1	-5,2	0,4	6,4	11.1	15.6	17.9	16.4	11.3	5,0	-0,1	-5,1	5.6
<b>Absolute min °C</b>	-31.9	-34	-21.8	-12.3	-5,5	2,4	7,4	5,1	-2,8	-11.2	-32.2	-29.1	-34

### 1.2.3 Population and Social Characteristics:

Kyrgyz Republic's population by the end of 2014 was 5.7 million people. The average increase in population for the last 10 years was approximately 1.0 % per year. Sixty five (60) % of the population officially lives in rural areas. However, significant rural to urban population migration has occurred in recent years with Bishkek particularly having an overall increase of 50%. Overall, population density (24 persons per km<sup>2</sup>) is relatively low, compared to that of other countries but is concentrated in the valleys that make up about 25% of the land area.

The country has a high level of literacy rate - more than 98% with more than 61% of the population having post-secondary education and 10% older than 15 years of age possessing a graduate degree. The officially registered unemployment rate is 3.0%, whereas the actual one is 11.5%, of which 62% are women. According to the main medical indicators of health (sickness and mortality rates, number of doctors and medical institutions, etc.), the Kyrgyz Republic is about average among the Central Asian republics.

### 1.2.4 Government and International Relations:

A former republic of the Soviet Union, the Kyrgyz Republic became an independent state on August 31, 1991. It is an independent, democratic, social, rule of law state. The state power is administered pursuant to the Constitution and the laws based on the principle of separation of the legislative, executive and judicial branches. The constitution was adopted in 1993.

Kyrgyzstan is a member of more than 63 international organizations, including the United Nations, Organization for Security and Cooperation in Europe (OSCE), Food and Agricultural Organization (FAO), Organization of Economic Cooperation (OEC), International Monetary Fund (IMF), World Bank (WB), International Bank for Reconstruction and Development, the Asian Development Bank (ADB), the Commonwealth of Independent States (CIS), and the World Trade Organization (WTO).

### 1.2.5 Economy:

The economy of Kyrgyzstan enjoyed gradual growth and improved living conditions up to 1991. This was followed by a period of economic decline with the initial transition to a market economy and subsequently after 1996 sustained growth until 2014. This transition was particularly characterized by an overall decline in industrial production by twofold between 1990 and 2005. During this period, the only sub-sector showing growth being non-ferrous metals extraction. Similarly there was decline in the agricultural sector but this is now seeing sustained growth and returned to 1990 levels by 2008. However the structure of the sector has been changed with a decrease in livestock farming and increase in crop production, as well as transition to smaller private operations and generally more labor and less input intensive operations. Compensating increases in economic activity has been seen from growth in the communications and service sector with the latter being particularly significant after 2000. Annex 1.1 provides graphical data provided by the National Statistics Committee for of overall GDP growth between 2010 and 2014 including that for key sectors that may influence HCFC consumption.

A national development strategy under the “National Strategy on sustainable development” was adopted by the President of Kyrgyz Republic at January 21, 2013. This provides a long-term macroeconomic assessment until 2020-2025. The principle results of this are summarized as follows:

- GDP growth is forecasted with annual growth rate up to 3% to 2016, from 3.6% to 4% to 2016-2017, and 5.5% to 2020.
- GDP growth per capita is US\$ 1,263 dollars per in 2013 with growth to US\$ 3,905 per person in 2025.
- Annual growth by sector in the next decade is predicted to be: Industry – 1.5%, Agriculture - 4.0%, and the general service - >6.2%.

### 1.2.6 Environmental Overview:

The overall environmental conditions in Kyrgyzstan are relatively positive but the country has and continues to have a number of environmental issues, largely as a legacy of situations that developed during the Soviet period and subsequent period of economic adjustment.

Kyrgyzstan is a signatory and/or Party to a wide range of international agreements and conventions related to the environment. The principle ones with some relation to ozone protection issues are listed below.

Convention/Agreement	Signature	Ratification/ Accession (a)
Vienna Convention	n/a	May 31/2000(a)
Montreal Protocol	n/a	May 31/2000(a)
• London Amendment to the Montreal Protocol	n/a	January 15/ /2003
• Copenhagen Amendment to the Montreal Protocol	n/a	January 15/ /2003
• Montreal Amendment to the Montreal Protocol	n/a	January 15/ /2003
• Beijing Amendment to the Montreal Protocol	n/a	August 6/2005
Stockholm Convention on Persistent Organic Pollutants	May 16/02	Dec. 12/2006

Basel Convention on the Trans-boundary Movement of Hazardous Waste and their Disposal	n/a	Aug, 13, 1996 (a)
Rotterdam Convention on Prior Informed Consent for Certain Chemicals and Pesticides in International Trade	Aug. 11/1999	May 25/2000
UNECE Convention on Long-Range Trans-boundary Air Pollution	n/a	May 25/2000 (a)
Convention on Access to Information, Public Participation in Decision Making, and Access to Justice in Environmental Matters	n/a	May 1/2001 (a)
UN Framework Convention on Climate Change	n/a	May 25/2000(a)
• Kyoto Protocol	n/a	May 13.2003(a)
UN Convention to Combat Desertification	n/a	Sept 19/1997(a)
Convention on Biological Diversity	n/a	Aug.6/1996(a)
• Cartagena Protocol on Bio-safety	n/a	May 10/2005(a)
Convention on Trans-Boundary Effects of Industrial Accidents	Observer	n/a

### 1.3 History and Status of ODS Phase Out

Kyrgyzstan is an Article 5 party to the Montreal Protocol (MP) currently operating in full compliance with its obligations under the MP and all current amendments. It acceded to the MP in 2000, ratified the Copenhagen, London and the Montreal amendments in 2003 and Beijing Amendment in 2005.

The country has a history of ODS consumption similar that in other smaller Central Asian and Caucasian Republics that were part of the Soviet Union. No ODS was ever produced in the country and all ODS was to be imported. Originally this was mainly from Russia but since 2000 it has originated primarily in ODS producing Article 5 countries, principally China and India but in some cases imported via intermediate Article 5 countries, for example, UAE. No ODS is reported as exported so for purposes of determining consumption, and imports equal consumption.

Prior to 1990 and up until 2004, consumption of ODS was predominately CFC-12 used in servicing of refrigeration equipment. Imports of halons and methyl bromide had also occurred. Up to 2000, CFC-12 consumption largely reflected the state of the economy with a decline through the 1990s. Since 2002, CFC-12 consumption fell rapidly as older equipment was getting retired and replaced by HCFC and to some extent HFC based equipment. This was facilitated by the availability of recovery and recycling capability in the servicing sector, retrofit/replacement programs to accelerate retirement of old equipment and the application of control measures in the form of quotas in accordance with Article 5 country phase out targets. Total phase out of CFC -12 was achieved at the end of 2009 when a CFC import ban came into effect.

HCFC consumption began after 1990 but had relatively limited application until 2000 and only became significant after 2004. In part this reflects the replacement of CFC containing equipment through retirement or retrofit/replacement programs with both HCFC and HFC based equipment although the former predominates due its generally lower capital and servicing costs.

#### 1.4 Summary of ODS Phase out Measures and Programs to Date

After ratification of the Montreal Protocol and the London Amendment in 2000, the Country Programme on ODS Phase-out was developed with the support of UNEP. An Interdepartmental Commission on Ozone was established in 2002 as part of the Country Programme's endorsement by the Government. At the same time the National Ozone Center (NOC) was established with the main purpose to implement the Country Programme and activities/projects established under it, namely the Refrigerant Management Plan (RMP) and a next phase called Terminal Phase-out Management Plan (TPMP) for CFC group of chemicals, and to provide a reporting and networking focal point with international organizations. The first phase of Country Program implementation covered the period 2002-2007 and the second the period 2008-2010. Table 1.4 below lists the MLF support received.

**Table 1.4 MLF Funded Projects**

Name of project	Implementing Agency/ Project Reference Code	Duration	Grant Amount US\$	Status
Institutional Strengthening Project	UNEP IM/4040-02/rev.1	2002 – 2009	481,140*	On-going
Training of Customs Officers	UNEP IM/4040-02-61-2223	2003 – 2009	74,910	Completed
Training of Specialists from Refrigeration Sector	UNEP IM/4040-02-61-2224	2004 – 2009	97,900	Completed
Recovery & Recycling Program	UNDP KYR/02/G62	2003 – 2007	136,380	Completed
Monitoring of Refrigerants Management Plan	UNDP KYR/02/G61-G62	2004 – 2008	18,645	Completed
Raising Awareness and End-users Incentive Program	UNDP KYR/02/G63	2003 – 2008	117,908	Completed
Terminal ODS Phase-out Management Plan (TPMP)	UNDP KYR/PHA/50/TAS/15	2007 – 2009	550,000	Completed
HCFC Phase-out Management Plan -Phase 1	KYR/PHA/63/INV/26	2011-2014	88,000	Completing

\* Current IS funding for 2015 and 2016 is US\$115,830.

##### 1.4.1 Current CFC, HCFC and other ODS phase-out progress

National full CFC and initial HCFC freeze and phase-out activities to reduce main categories of ODS import and consumption were carried out under the State ODS Phase-out Programme (Phase I in the period 2002-2007, and Phase II - 2008-2014). The implementation of the State Programme during RMP, TPMP and HPMP-I time included the following activities:

- Recovery and recycling of CFC refrigerants components implemented during 2003-2010 (with reductions in CFC-12 by 9.1 MT);
- Training of technical servicing personnel components implemented during 2003-2010 (with reductions in CFC-12 by 13.1 MT);
- Training of customs authorities components implemented during 2004-2010 (with reductions in CFC-12 by 25.5 MT);
- End-users incentive programme and CFC alternative awareness raising implemented during 2003-2010 (with reductions in CFC-12 by 2.5 MT by

providing incentive payments to companies for equipment replacement and retrofits);

- Halons phase-out programme implemented during 2005-2008 (ban of halons' imports introduced from June 1, 2008);
- Methyl Bromide reduction programme implemented during 2002-2008 (ban of methyl bromide imports introduced from September 1, 2008).
- Terminal CFC Phase-out Management Plan (TPMP) implemented during 2007–2010 (ban of CFC import introduced from January 1, 2010)
- Initial HCFC Phase-out plan (HPMP-I) being implemented during 2011-2015 (aimed at the freeze of HCFC baseline consumption in 2013 with a progressive decrease in consumption in subsequent years by 10% in 2015).

HPMP-I for Kyrgyzstan was approved at the 63<sup>rd</sup> meeting of the Executive Committee in April 2011. The project activities were originally planned to cover August 2011 thru 31 December 2014.

The initial phase of HPMP has been aimed in terms of its overall HCFC phase-out targets at the effective freeze on consumption by 2013 at 2009/2010 average baseline levels, and a 10% reduction in HCFC imports/use by 2015.

The following provides explanation on a break-down of investment and non-investment costs for HPMP-I approved for the Government by the Executive Committee, to be implemented through respective implementing agencies – UNDP and UNEP. The overall incremental cost as capped by decision 60/44 for this HPMP-I was approved at US\$ 88,000 level, not counting agency fees associated. The details of this funding are summarized as follows.

IA	Project	Total	Tranche 1
1 & 2. Non-investment Components	UNEP	1. Legal and Regulatory Action	\$ 5 200
	UNEP	2. Technical Capacity Strengthening	
		2.1. Customs/environmental training	\$ 12 500
		2.2. Technician Training	\$ 12 500
		2.3. Monitoring	\$ 5 000
		Sub-Total for UNEP	\$ 35 200
3. Investment Component	UNDP	3.1 Initial development of HCFC Refrigerant Management Plan	\$ 52 800
		Sub-Total for UNDP	\$ 52 800
		Sub-Total UNEP	\$ 35 200
		Sub-Total UNDP	\$ 52 800
		Support cost UNEP (13%)	\$ 4 576
		Support cost UNDP (9%)	\$ 4 752
		Grand Total UNEP	\$ 39 776
		Grand Total UNDP	\$ 57 552

It should be noted that the Government had decided that the Institutional Strengthening programme would be funded and implanted outside of HPMP programme.

#### 1.4.2 ODS policy/legislative/regulatory and institutional framework

##### ODS legislation/regulations

Kyrgyzstan's overall policy respecting the phase out of ODS is reflected in its original accession to the Montreal Protocol in 2000 along with subsequent ratification of all current amendments, hence a policy commitment to meet applicable control measures. This overarching commitment along with detailed aspects that give it substance were formalized in the form of national legislation, supporting government resolutions addressing specific issues such as import licensing and application of import quotas, as well as formal instructions issued by responsible authorities on phase out milestones. Annex 1.3 of the current document provides a list of the specific legal acts related to ODS.

Regulations are also currently in place requiring national certification of refrigeration and fumigation specialists working with CFCs, HCFCs, HFCs and natural refrigerants, and pesticides alternatives to methyl bromide including a requirement for renewal of such certification through refresher trainings every two years.

The licensing system with the quota-based HCFC controls has been firmly in place and in full operation in Kyrgyzstan. It was set up in line with the HPMP agreement between the Executive Committee and the Government. The import quota is set annually by the State Agency of Environment Protection and Forestry (SAEPF) which is the head Governmental Agency for the Inter-departmental Coordination Committee on the State ODS Phase-out Programme.

Further, certain aspects of the national effort for the Green-house gases (GHG) phase-out, including the use of HCFCs which have GWP features, are considered in the Country Development Programme for 2012-2014 as approved by a Governmental resolution #540 dated September 8, 2011, and a set of national-level environmental security measures spanning 2011 thru 2015 were approved as the initial regulatory package (resolution #599 dated September 23, 2011).

NOU has completed an analysis of technical, refrigeration sector related regulations as adopted by the EU and selected CIS region countries. Resulting from that study, a draft technical regulation on "Safety requirements for the operation of refrigeration equipment" has been formulated with applicable EU-adopted provisions concerning the training and certification of personnel directly built into the regulation. Currently, official views and comments are expected to this draft from the key line ministries and departments: Ministry of Economics and its National Centre for Standardization and Metrology, and State Inspectorate for Environmental and Technical Safety before the package can be approved for implementation and enforcement oversight.

As the Government is planning to join the Customs Union with the Russian Federation, Kazakhstan, Belarus and Armenia, a Special Working Group on these issues was established. A large number of challenges, one important being the removal of physical border controls among the countries of the Union among others, have been identified in the context of the Customs Union's requirements which is further complicated by differing HCFC phase-out schedules as applied to Article 5 and non-Article 5 (CEITs) under the Montreal Protocol's provisions. A high workload with amendments to existing normative legal acts regarding ODS and ODS-containing goods, their circulation and movement within the territory of the Customs Union is planned to be organized.

#### **1.4.3 Phase-out activities in the manufacturing sector**

No eligible manufacturing enterprises were included in HPMP-I for financing the conversion works. The reason for that was that Winterlux company (for which preparatory funding was received, partially spent during HPMP-I preparation, and balance returned to the MLF Secretariat) that specialised in PU sandwich panel manufacturing made in-company investments and completed their own conversion to c-pentane in 2011, and since then has not been requesting import permits for HCFC-141b based polyols.

#### **1.4.4 Phase-out activities in the refrigeration servicing sector**

During HPMP-I, fourteen (14) training workshops have been organized: eight (8) for Customs (northern and southern regions) and four (4) for refrigeration specialists with a total of 381

participants attended. The following sub-sections provide additional details on the activities carried out under the first (1<sup>st</sup>) tranche of HPMP-I.

The main purpose of training workshops for technicians (151 people trained in total) was to achieve reductions in HCFC import and use through competent approach to equipment/appliance servicing and maintenance, backed by HCFC-22 re-use through recovery and recycling. Four (4) workshops for refrigeration service technicians were conducted. This component was considered as a direct contribution to the implementation of the national HCFC phase-out programme in line with country's obligations under the Montreal Protocol.

The workshops' objectives in general covered the following key capacity building elements:

- Raising awareness of participants on the ozone layer depletion and required measures taken by the global community for its protection and restoration;
- Presenting national and international legislation in respect to protection of the ozone layer;
- Sharing information for participants about the State HCFC Phase-out Programme and HCFC alternatives; and on the Customs Union and its requirements: prospects and barriers for the refrigeration servicing sector;
- Presenting/learning physical/chemical and thermodynamic characteristics of HCFCs, HFCs, hydrocarbons, and other natural refrigerants as substitutes to HCFCs;
- Demonstrating one (1) short documentary on "Modern methods of refrigeration servicing";
- Lecturing on HCFC alternatives: economics/market availability, low GWPs options, energy-efficiency; and improved HCFC recovery/reuse practices;
- Practical trainings on use of machinery/tools for HCFC/HFC recovery and recycling to reduce gaseous emissions during systematic and unplanned equipment maintenance; and application methods of ULTIMA PRO gas analyser for gas composition identification.

One of main achievements of these workshops was the facilitation of progressive reduction in HCFC import and use during three (3) years of HPMP implementation to the baseline level of 4.1 ODP tons due to minimization of refrigerant leakages during equipment repair/maintenance.

NOU also supported national-level consultations on a number of issues, and specifically on:

- Scope of activities by the National Refrigeration Association "EcoHolid" in the country;
- Energy-efficient solutions for A/C and heating systems, and equipment assembly;
- New scientific developments in refrigeration equipment types, ozone- and climate safe technologies introduced in the refrigeration industry; and
- Draft technical regulation on "Safety requirements for the operation of refrigerated equipment".

During HPMP-I, overall sixteen (16) sets of servicing tools/equipment were purchased and then distributed to technicians/service centers in the country. Each set of tools consisted of the following:

- Plastic tool box;
- Vacuum pump;
- Set of flare tools for copper tubes;
- Adapters for charging vehicle air conditioners;
- Gauge manifold;
- Multi-meters/thermometers; and



- Propane-based welding equipment.

The main purpose behind such tooling exercise in the servicing sector was to stimulate refrigeration technicians to adhere to higher servicing standards and ensure more competent and safe daily work for the environment.

Modern cooling systems based on natural and alternative refrigerants for countries with hot climates and issues about the certification of refrigeration and service companies in Kyrgyzstan were also in focus of such national consultations. One of conclusions of the National Refrigeration Association's Congress held in 2013 was the adoption of a governmental resolution emphasizing that it fully backs new national policy on sustainable development, and is ready to make a professional contribution to its implementation, in particular, in the field of design and installation of heating, ventilation and A/C appliances and equipment during civil construction based only on modern energy-efficient and "green" technologies in the area of national food supply and security.

With respect to certification of refrigeration specialists, the Refrigeration Association in partnership with the National Technical University assisted in training of:

- Thirty (30) mechanical engineers in refrigeration and A/C equipment,
- Professional level electric mechanics for refrigerator repairs/maintenance in:
  - Three (3) vocational schools (473 trained mechanics and electrical engineers) in the north of the country;
  - One (1) vocational school (140 trained mechanics) in the south; and
  - One (1) training centre of the National Refrigeration Association (6 mechanics) in the north.

In one of the professional schools in Bishkek in 2013, NOU/Association organized a technician certification centre where required training equipment, tools and technology stands were supplied to make the centre operational. Ministry of Education and Science approved the training and certification programme prepared by the Association for this centre, and a special license for such activities was received.

In line with the existing contract between NOU, national RAC Association and Moscow State University (faculty of cooling technologies), fifty-four (59) students were received for admission at the University on a state budget scholarship at expense of the Russian Federation.

Under the umbrella of the CAP team, NOU in cooperation with UNEP and UNDP organized one (1) thematic meeting on HPMP implementation in Art. 5 Russian-speaking countries of the region with invitation extended to some of non-Article 5 countries (Belarus, Tajikistan) supported by a separate GEF/UNDP programme active in the region. The meeting was held during 24-26 September, 2013 in Bishkek, Kyrgyzstan. Among the topics covered by the conference were the overviews of HPMP implementation in each participating country in the view of coming 2013/2015 milestones, identification and discussion over barriers for promoting low GWP/higher energy efficiency technologies, consultations on preparation for HPMP-Stage IIs for Art. 5 countries.

#### **1.4.5 Phase-out activities in the customs training**

The country's consumption is defined by HCFC imports only with no production capacity established locally. Therefore, sustained and regular strengthening of Customs border control capacities related to more effective HCFC import/export measures was considered very

important during formulation of the overarching HPMP strategy and HPMP-Stage I (Tranche I), as well as during its implementation period.

In terms of the current situation description, there is a reportedly significant turnover of staff at Customs department, accompanied by frequent staff rotation among central/territorial/border offices. This necessitates that trainings need to cover a greater number of staff, and be regularly held. In the reporting period, and within existing budgets, eight (8) such workshops for Customs officials operating in the north and south of the country were successfully completed. In total, 230 customs officers were trained.

In terms of the training scope, these trainings were designed to cover the following foundational elements:

- assisting Customs administration in improving controls and monitoring procedures over HCFC/equipment' import/export and transit;
- general awareness raising on ozone layer protection, resulting health/environmental aspects, and Montreal protocol and its provisions as a direct obligation of the Government after ratification;
- presenting terms and adopted schedules of the Country Programme on HCFC/ODS phase-out;
- discussing main provisions of applicable international (as reference) and national legislation (as practice) on implementing HCFC/equipment' import/export control measures, and monitoring of illegal trade;
- reviewing existing provisions of ODS licensing system and presenting applicable Customs codes;
- staff training at Customs administration and other agencies on the use of HCFC/ODS/HFC gas analyzing tools for correct identification of chemicals in question.
- entry to the Customs Union: prospects and barriers.

In terms of a feedback loop on improving the content of future trainings, during the workshops, participants made suggestions and recommendations on how to improve control of HCFC/equipment' import/export and transit, which were summarized below:

- establishment of a special sector within the State Customs Administration on handling environmental programmes;
- creation and listing of a contact points from key ministries and departments for emergency issues at border Customs stations, with regular updating;
- incorporation of key aspects featured and promoted through trainings by the "Green Customs" initiative in the accreditation criteria for Customs staff;
- revision and updating, according to Green Customs' recommendations, of the regulatory document "Agency interaction guidelines for Prosecutor's Office, National Security Office, Ministry of Internal Affairs, State Customs Administration and State Agency of Environment Protection and Forestry on addressing violations in environmental legislation";
- establishment of a database for Customs authorities on the list of controlled goods (red, yellow, green lists); and
- supply of additional ODS test tools, visual study materials and regular trainings to update knowledge.

By structure, workshops were usually held during two days duration, and consisted of both theoretical and practical parts. In trainings, all recent updated textbooks/manuals, brochures, and posters published by NOU were used as accessory materials.

Approximately more than 1,500 copies of various publications (500 booklets, posters and leaflets, 1,000 quick summaries on HS nomenclature, and 50 copies of guidance materials) were distributed during reporting period. Materials included Instructions to Customs Office on national ODS regulations, 2012 HS nomenclature (a Green Customs publication), Illegal Trade Cases (mislabelling options, common trade names), Brochure "Montreal Protocol and the Customs Service" and other supporting visual aids. Question/answer sessions were promoted at the end of trainings, and a range of applicable administrative measures for regulatory violations were discussed with participating staff. After training, NOU performed knowledge tests as a part of the improved capacity building programme.

In 2012 NOU received registration at ENVIRONET of WCO as a national focal point on illegal trade issues ([www.wcoomd.org](http://www.wcoomd.org)). After getting acquainted with the structure of this initiative and studying relevant WCO materials, NOU was granted with access to ENVIRONET network. ENVIRONET regularly posts information/data on ODS transit and illegal trade worldwide.

Further, as a direct result of capacity building activities and other related initiatives, three (3) cases of unauthorized imports in ODS were prevented in the beginning of 2013: two (2) national air companies attempted at import halons without licenses, and one (1) non-registered company – at import of 40 MT of HCFCs from China. This serves to demonstrate that the ODS control system is operational, and regulatory controls are enforced by Customs officers.

#### **1.4.6 Initial Development of HCFC Refrigerant Management System**

In the light of global discussions on HCFC replacement technologies, and NOU's attendance at CCAC technology forums during recent years that marked HPMP's start, NOU decided to attempt at a demonstration of newer low GWP technologies of small scale in the country to back the spread of information on their market availability and performance in hot climatic areas of the Southern Central Asia region. In this respect, and upon receipt of a NOU's written request, the original project's working plan was slightly amended to allow for such equipment demonstration.

In this respect, an ITB (tender) for a two-stage demonstration installation running on carbon dioxide (CO<sub>2</sub>) was launched. Special preparatory work on selecting specifications/application needs for such demo-equipment was completed before ITB. The idea behind local assembly of equipment based on imported components and testing of such pilot installation running on HCFC-free/low GWP R744 refrigerant was to demonstrate to refrigeration technicians the new refrigerants and facilitate gaining practical experience in applying advanced technologies on the national level.

During ITB, three (3) offers from one local and two foreign suppliers were obtained. After analysing the results from financial stand-point, the proposed budgets exceeded the original estimate by 2.5-3 fold, and this result in dropping further tendering as well as work on the component with such budget limitations. As a direct result of this experience, NOU decided to go back to the original implementation approach and procure servicing tools for the country using the remaining available budget. NOU and UNDP launched a separate new ITB process which is backed by a national expert, and expected to supply additional equipment in 2015 to complete HPMP Stage I.

### 1.5 Lessons Learned during HPMP-I:

Based on experience to date the following general lessons considered relevant to development and implementation of the HPMP have been noted such as explained further:

- HCFC phase-out activities require certain amendments and supplements to normative legal acts for limiting HCFC-equipment supply, and creation of new economic mechanisms to ensure the implementation of these tasks. However, in terms of licensing and application of limits on the use of HCFCs in the country, so far the restrictions on the import of HCFC-containing equipment have not yet been applied in the country. Otherwise, introduction of any new HCFC capacity using ozone-friendly technologies is carried out mainly by a ban on the purchase of HCFC-containing equipment.
- The transfer of technological processes and equipment to alternative, non-ODS substances, and specifically substitutes with small or insignificant GWP such as hydrocarbons, carbon dioxide and ammonia, nominally is set as a priority in the national legislation, but until now this has seen a very much limited practical application, primarily because of high cost of these technologies and the lack of detailed information on alternatives to technologies using HCFCs. The other main challenge for the transition to environmentally sound ozone-friendly technologies is the lack of a detailed registry of equipment containing ODS, which could otherwise become a basis for the conversion plan.
- As part of the HCFC import licensing and customs control, the Government expects certain difficulties in implementation of the Customs control on the territory of the Customs Union due to removal of check-points.
- While consumption continues to be concentrated in the refrigeration servicing sector and remain at a low level in the manufacturing sector, there is a consistent trend of progressive reduction in the actual consumption of HCFCs. This is largely a result of the timely adoption of advanced control measures, providing replacement for HCFC-based technologies to non-ODS.
- Lastly, in connection with the active use and spread of HFCs as substitutes to HCFCs and efforts of international community to promote the amendments to the Montreal Protocol to control HFCs circulation, Government considers it necessary to start a work on regulation of imports of HFCs.

In order to ensure the current stable future progress towards reducing the consumption of HCFCs, it is necessary to take in HPMP Stage 2 a number of consecutive actions by the public and private sector which will form the basis for achieving the goals and objectives of the National HCFC Phase-out Strategy, which are:

- Increasing ability to control imports: Kyrgyzstan currently has a limited ability to control the import of HCFCs when borders are open with the Customs Union's countries. It is necessary to develop and adopt a multilateral agreement (Kyrgyz Republic, Armenia, Russian Federation, Belarus and Kazakhstan) on the movement and recording of ozone-depleting substances and products containing them in the trade operations of the Customs Union's Member States.
- Restricting volumes during HCFCs trade operations as a control measure: The existing system establishing refrigerant volumes in licenses for the purchase/sale of ODS has demonstrated its good performance - to control HCFCs, it is imperative to strengthen

and expand this system with progressive quantitative HCFC volume limitation during licensing activity. To help this regular updates (a database) on HCFC-operating equipment banks would be needed for informed management decisions as the previous comprehensive inventory estimates were made in 2009.

- Enhancement of technical, educational and institutional capacity: A steady tendency ODS phase-out in Kyrgyzstan requires the support of its institutional capacity in this area, which has recently declined due to funding limitations, that may be of sufficient risk to further advance and sustain the ODS phase-out.

Currently, not all border crossings of the country are equipped with multi-gas analyzers for HCFC identification purposes in bulk, including those contained in imported products. In this regard, it is necessary to equip the external border crossings (outside border of the Customs Union) with required equipment, followed by practical trainings of customs authorities.

Particular attention should be paid to building capacity in the refrigeration servicing industry, the integration of components aimed at improving energy efficiency and reducing greenhouse gas emissions, development of information materials, training modules, training of national trainers (teachers), refrigeration technicians working with HCFCs and their substitutes, integration of training programs in the training and advanced training of educational institutions in Kyrgyzstan.

Given that servicing of refrigeration equipment mainly involves HCFCs, it is necessary to support and strengthen the HCFC re-use system in the country to ensure maximum possible refrigerant recovery, recycling and application, gradually introduce alternative technologies, and ultimately, prepare for sound disposal of accumulated HCFC waste.

Given the fact that, in line with Customs Union's requirements, after January 1, 2020 the importation of HCFCs to Kyrgyzstan will be prohibited, such re-use scheme will be key to support the maximized use of recovered, recycled and reclaimed HCFC materials for maintenance and repair of HCFC-dependent equipment. Continuing awareness of the importance and benefits of HCFC phase out within the government, major stakeholders (particularly end users of refrigeration equipment), and the general population is critical to obtaining and sustaining government policy commitment for adoption of future control measures, and providing advance warning of phase out needs and impacts to those dependent on HCFCs.

In the manufacturing sector, there was some use of HCFCs previously detected during the initial 2009 HCFC survey. HCFC-141b based polyols (up to 1 ODP ton) were in import for the use in foam blowing by the Winterlux company that later on changed the technology with their internal investments, and in 2013 a single-time import of HCFC-22/142b mixture could not be avoided for a new foam company (considered ineligible for MLF assistance) LTD "Daar", which planned to replace this mixture with other non-ODS alternatives.

While Kyrgyzstan is already implementing ozone-friendly alternatives to HCFCs in the form of technologies based mostly on HFCs (excluding domestic refrigerators running on hydrocarbons and several large industrial refrigeration plants using ammonia), there is a limited penetration of other newer technologies with low global warming potential.

Such technologies will be expected to become an international standard for the markets in which products manufactured in Kyrgyzstan (foam or assembled refrigeration equipment) will have to compete. Therefore, national authorities and private businesses must develop a program to stimulate the owners of industrial and commercial refrigeration equipment, including a system for modification/replacement of equipment, demonstration and promotion of acquisition of technologies with low global warming potential.

## **2. Description of Current Policies, Legislation, Regulation and Institutional Structure**

### **2.1 General Policy and Regulatory Framework**

Kyrgyzstan's overall policy respecting the phase out of ODS is reflected in its original accession to the Montreal Protocol in 2000 along with subsequent ratification of all current amendments, hence a policy commitment to meet applicable control measures. This overarching commitment along with detailed aspects that give it substance has been formalized in the form of national legislation, supporting government resolutions addressing specific issues such as import licensing and application of import quotas, as well as formal instructions issued by responsible authorities on phase out milestones. Annex 1.3 (including Annex 1.4 on controlled ODSs) provides a list of the specific legal acts related to ODS.

The following summarizes the main control measures currently imposed by this regulatory framework which provides building blocks for regulatory measures that will be required to meet Decision XIX/6 obligations.

- Government Resolution # 860 (2004): Authority to impose bans and quotas on import and export of MP Annex A ODS and equipment/products containing them
- Government Resolution # 374 (2008): Introduces ban effective September 1, 2008 on import of methyl bromide (except QPS), halons and equipment containing or depending on halons, and used equipment using Annex A substances as well as mandating publication of mandatory future ODS phase out dates
- Government Resolution # 594 (2009): Defining ODS Substances (Lists A, B, C and E) and ODS containing equipment/products (List D) for which import/export licensing is required are defined.<sup>5</sup>
- Letters of Instruction, State Agency for Environmental Protection and Forestry (SAEPF): Annual import quotas for MP substances effective January 1, 2012.
- The Law of the Kyrgyz Republic "On the Protection of the Ozone Layer" from 18 December, 2006 # 206.
- The Law of the Kyrgyz Republic "On Environmental Protection" from 17 July, 1999 # 53.
- The Law of the Kyrgyz Republic "On Air Protection" from 12 June, 1999 # 51.

The main framework Law "On Environmental Protection" of 1999 regulates, among other issues:

- Provision for collection and recording of data on consumption of ozone-depleting substances;
- Regulation of chemicals that deplete the ozone layer in production and household use;
- Establishment and maintenance of standards of maximum permissible emissions of hazardous substances that affect the ozone layer; and

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<sup>5</sup> Lists A, B, C and E correspond to Annexes A, B, C and E of the Montreal Protocol.

- Implementation of sanctions for violation of mentioned requirements, including suspension or prohibition of harmful activities by decision of the authorized state bodies.

The other main Law is "On Air Protection" and was adopted same 1999 year as the main framework. It determines that legal entities servicing/repairing or using refrigeration, air conditioning, firefighting and other products containing ozone-depleting substances are obliged to ensure their recording and implementation of measures to prevent harmful effects on the atmosphere. In accordance with this Law, the import, production and use of products containing ozone-depleting substances is permitted after consultation with the specially authorized state bodies on the environment.

A more specific legislation, as of 2006, the Law of the Kyrgyz Republic "On the Protection of the Ozone Layer" determines state policy of the Kyrgyz Republic and fulfillment of international obligations in the field of environmental protection and aims to protect and prevent the destruction of the ozone layer, its recovery in order to protect human health and the environment from adverse effects caused by destruction of the ozone layer. The law regulates relations arising from implementation of activities related to usage of ozone-depleting substances, including ozone-depleting substances contained in products.

Further to reinforce the regulatory system, on April 18, 2008, the Law of the Kyrgyz Republic "On amendments and additions to the Code of Administrative Offences of the Kyrgyz Republic" was adopted. Article 181-1 of the Code regulates the liability for failure to comply with measures aimed at reducing the use of chemicals that harmfully affect the environment and the ozone layer of the atmosphere according to the lists of the Montreal Protocol on Substances that Deplete the Ozone Layer, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

A Governmental resolution on the state regulation of import and export of ozone-depleting substances and products containing them was approved by the Government of the Kyrgyz Republic from September 19, 2009 # 594. The resolution also determined that the import/export of ozone-depleting substances (List A, B, C, E) and products containing them (List D) are subject to licensing.

Currently, in connection with the Customs' Union's requirements, it is necessary to make a full analysis of such new requirements and prepare amendments to a number of normative legal acts in order to align those to the legal environment proposed under the Union.

The following lists important amendments needed in the following legislative framework acts:

- The Law "On the Protection of the Ozone Layer" (of 2006) - by new provisions related to the prohibition of import of ODS/HCFs-containing products starting June 2015, restriction on HCFC import and specific rules for import and export of such and their containing products within the territory of the Customs Union.



- The Law “On Environmental Protection” (of 1999) - by provisions related to the “prohibition of waste disposal in facilities of production and consumption, which has lost its consumer properties, and containing ozone-depleting substances, without recovery of these substances from mentioned products in order to recover them for further recycling (recycling) or destruction”.
- The Law “On Air Protection” (of 1999) - by provisions related to the state control over all types of refrigerants during the entire life cycle (production, recycling, recovery, reclamation and disposal).
- The Resolution (of 2009) on the state regulation of import and export of ozone-depleting substances and products containing them - by new rules requiring import of ODSs in disposable cylinders from 1 January 2016, and particularly specific requirements on import and export of ODSs/HCFs and ODSs/HCFs-containing products within the territory of the Customs Union.
- The Administrative Code (of 1998) - by stricter administrative responsibility for emissions of harmful substances into the atmosphere without authorization, improper use, non-use of facilities, equipment or apparatus for cleaning gases and control of emissions of harmful substances into the air, which can lead to its contamination, or the use of these defective structures, equipment or apparatus.
- The Criminal Code (of 1997) - by tougher measures for smuggling a list of substances, including ozone-depleting substances and products containing them, providing for imprisonment for up to ten years
- The Country Programme on ODS phase-out during 2015-2020 (Phase 3) - to provide for the complete HCFC phase-out by 2025, including 2.5% servicing tail from 2020 to 2025, under the Montreal Protocol on Substances that Deplete the Ozone Layer.

## **2.2 National Institutional Arrangements for ODS Issues**

Overall supervision of action related to ODS issues is provided by the Interdepartmental Commission on Ozone Issues with specific responsibility for coordination of work connected with the implementation of the Country Program. This was established in 2002 as part of the Country Program endorsement (Government Resolution No. 263). Formal designations of membership on the Commission was most recently approved by Government Resolution No. 374 in July 2008 as follows:

- Chairman of the commission – Head of the State Agency on Environmental Protection and Forestry under the Government of the Kyrgyz Republic.
- Deputy Chairman of the commission – Deputy Minister of the Ministry of Emergency Situations of the Kyrgyz Republic.
- Formal Members:
  - Deputy Minister of the Ministry of Economy of the Kyrgyz Republic
  - Deputy Minister of the Ministry of Health of the Kyrgyz Republic
  - Deputy Minister of the Ministry of Agriculture and Land Reclamation of the Kyrgyz Republic
  - Deputy Minister of the Ministry of Education and Science of the Kyrgyz Republic

- Head of the State agency on Vocational Technical Training under the Government of the Kyrgyz Republic
- Head of the Customs Supervision Administration of the State Customs Service
- Expert of the Department of Agricultural Sector and Nature Management of the Government of the Kyrgyz Republic

The coordination and administration of matters related to the MP and national programs related to its implementation is undertaken by the National Ozone Centre (NOC) under the supervision of the Interdepartmental Commission on Ozone Issues.

In addition to overall coordination of national initiatives it is responsible for reporting to the Ozone Secretariat, acting as the national focal point for MP matters and international assistance programs. Within the government structure the overall legislative regulatory authority lies with SAEPF. Authority for licensing and import/export matters lies with the Ministry of Economy (ME) with controls and enforcement and reporting undertaken by the State Customs Service. Supported by the NOC, State Inspectorate for ecological and technical safety under the Government of the Kyrgyz Republic have responsibility for certification of refrigeration technicians and related requirements applied to end users of refrigeration equipment. Also, there is “EcoHolod” Republican Public Association which is engaged in activities related to certification of refrigeration technicians all over the Kyrgyz Republic and other questions related to refrigeration sector.

### **2.3 Implementation of the Licensing System and Application of Quotas:**

The practical administration of ODS measures, including its monitoring and reporting, is coordinated by the NOC. The following government agencies have specific assigned authorities for various aspects of regulatory measures applied:

- Ministry of Economy: Licensing and registration of importers and exporters;
- State Agency on Environmental Protection and Forestry: Endorsement of licenses, control over observance of the laws on protection of the Ozone Layer;
- State Customs Service: Control over import and export of ODS and ODS-containing goods.

The procedure for licensing ODS imports and exports involves the submission of an application with supporting documentation to SAEPF for consideration and, upon its approval, the issuing of the license by ME. Both agencies maintain records and a formal registration applicable to importers and exporters. The State Customs Service maintains data on actual import and exports, and submits this in aggregate form to the NOC quarterly. The NOC also maintains a data base containing information on companies and specialists dealing with supply, maintenance, repairing and servicing of refrigeration equipment.

According to amendments being made to the Law of the Kyrgyz Republic “On the Protection of the Ozone Layer” from 18.12.2006 No. 206 – The Government of the Kyrgyz Republic “Establishes limits of consumption of ozone-depleting substances and terms of reduction (phase-out) of their use in accordance with international agreements of the Kyrgyz Republic.

## 2.4 Measures respecting HCFCs

The Government assumed HCFC phase out obligations current under the MP, and specific legislation and regulation applicable to HCFCs covers HCFC chemicals being subject to import licensing as an ODS.

The preparation of this HPMP-2 represents the country's formal initiative in relation to completed HCFC phase out by 2020.

## 2.5 Stakeholder Involvement in the Policy and Regulatory Regime

Overall, the key mechanism for direct stakeholder involvement in the development and application of policy and regulatory actions related to ODS is the Interdepartmental Commission on Ozone Issues. In addition to Ministry of Economy and the State Customs Service, other stakeholder government agencies sitting on the Interdepartmental Commission are: Ministry of Emergency Situations, Ministry of Health, Ministry of Finance, Ministry of Agriculture and Land Reclamation, Ministry of Education and Science, Ministry of Labor Migration and Youth, and State Agency for Vocational Training. State Inspectorate for ecological and technical safety under the Government of the Kyrgyz Republic is responsible for certification of refrigeration technicians. In addition, the Commission has non-government members representing the scientific community, academic institutions, industrial associations (specifically the Refrigeration Association) and several major industrial users of ODS. Furthermore, SAEPP is specifically directed under Government Resolution No. 374 to inform all interested legal entities and natural persons about schedules for ODS phase out, a function also fulfilled by the NOC as described below.

At the level of end users, individual service providers and the general public, the NOC's implementation of the HPMP-1 has involved extensive awareness and public disclosure on ODS phase out, both as a directed sub-activity and as part of the training activities in the refrigeration and other sectors. Annex 1.2 provides a representative list of the information products that have been produced and Table 2.1 summarizes the wide range of specific training and awareness activities undertaken. In particular, the associated monitoring activities applied to the HPMP-1 have served to feedback lessons learned to the policy level through the Interdepartmental Commission.

**Table 2.1 Trainings and awareness activities for 2011-14**

Venue	Date	Number of participants
Leninskoe village, training center	2012	30
Osh city, Osh Customs		23
Jalalabad city		19
Leninskoe village, training center	2013	24
Osh city, Osh Customs		40
Leninskoe village, training center		35
Leninskoe village, training center	2014	33
		36
		35
		33
		23
		22
		28
Osh city, Osh Customs	2012	20
Bishkek city		44
Kara-Kul city (Jalalabad region)		31

Alamedin village, Chui region	2013	35
Osh city		30
Bishkek city		43
Cholpon-Ata	2014	34
Osh		38
Osh city	2012	45
Bishkek	2014	35
Osh		44
Cholpon-Ata, Issyk-Kul Region	2011	28
Kara-Kul city (Jalalabad region)	2012	31
Ysyk-Ata, Chui region	2013	40
Bosteri Village, Issyk-Kul Region	2014	38
Hotel «Ak Keme», Bishkek	2012	65
Hotel "Dostuk", Bishkek	2013	23

### 3. Data Collection and Surveys

#### 3.1 Survey Methodology and Approach

Historically, estimation of ODS consumption has primarily been made using the “top-down” approach based on reported imports from the State Customs Authorities with the cross-checks via expert advice from long-term NOC experts based on field surveys.

Table 3.1 summarizes this available data for the period 2010-2013. The total amount of HCFCs imported in 2014 according to import licensing and Customs data reports was 43.11 tons.

**Table 3.1: Officially Reported HCFC Consumption 2010-2013 (tons)**

Substance	ODS/ ODP	2010	2011	2012	2013
HCFC-22	ODS	75,2	53,8	52,9	60,4
	ODP	4,136	2,96	2,91	3,32
HCFC-141b	ODS	7,26	0,00	0,00	0,00
	ODP	0,799	0,00	0,00	0,00
HCFC-142b	ODS	3,0	0,00	0,00	10,3
	ODP	0,195	0,00	0,00	0,67
<b>Totals</b>	<b>ODS</b>	<b>85.46</b>	<b>53.6</b>	<b>52.9</b>	<b>61.7</b>
	<b>ODP</b>	<b>5.13</b>	<b>2.96</b>	<b>2.91</b>	<b>3.99</b>

However, for purposes of the current HPMP-II, it is recognized that a strictly “top-down” approach of relying on reported import data may have limitations. As in any country, the accuracy and comprehensiveness of this type of data will be a function of the capacity of the responsible institutions to identify imported HCFCs and potentially HCFC containing equipment/products through the licensing system, Customs data, and its level of physical enforcement. It will also be a function of the degree to which importers, distributors and end users of such equipment voluntarily comply with reporting and control measures and what economic and structural factors may exist to discourage such compliance.

In Kyrgyzstan, there remain a number of institutional, geographic, and product packaging factors that could impact on the accuracy and comprehensiveness of current customs data based reporting. These are discussed individually below:

- **Import Identification:** There is a basic systemic issue related to the ability of current customs codes to differentiate HCFCs and HCFC containing products. Effectively, imports that need to be separately identified in this way for purposes of data collection and potentially future application of control measures but may in fact fall under a number of different categories that also cover other chemicals and equipment. Work on this issue between the NOC and State Customs Committee over the last several years has largely resolved customs code issues but this requires continuing coordination.
- **Geographical Constraints:** Kyrgyzstan while a relatively small country has extensive borders with four neighboring countries (China, Kazakhstan, Tajikistan, and

Uzbekistan). In total, 67 official border points exist with formal customs inspection, and there are numerous unofficial border crossing points, often in remote areas, that allow uncontrolled access to the country. Further, due to Customs Union the checkpoints along Kazakhstan will be removed, and in-country checks on HCFC movements and use would be required as well.

- Product Packaging Factors: The import of most HCFC and HFC chemicals occurs in relatively small single use containers, a departure from the historical practice of import of CFCs in larger containers directly from producers in Russia. Container sizes typically range in size from 0.250 to 13.6 kg. It is also known that there is substantial variation in the accuracy of labeling in terms of actually reflecting what the contents are. This is a particular issue with refrigerants originating in China, where material can be purchased from dealers in cities like Urumqi, in a variety of small container configurations<sup>6</sup>.

In view of the above limitations, a more comprehensive “bottom up” approach to estimating HCFC consumption was adopted as a complementary measure. It relies on direct survey and supplemented by the use of statistically based data to estimate the bank of HCFC containing equipment in service.

The survey based methodology involved data collected directly at the enterprise level, including import/distribution enterprises, end users of HCFCs and HCFC containing equipment, and refrigeration servicing organizations, along with statistical data related to the amount of HCFC containing equipment in the country. The process was facilitated by contacts among end-users generally were obtained through the NOC, the Refrigeration Association, and relevant national and local government agencies, as was the statistical data related to estimated total inventory of operating HCFC containing equipment.

Given the relatively small size of the country as well as the general concentration of refrigeration and air conditioning equipment in several regions and urban centers, the number of survey targets while significant was of a size that surveys could be conducted by direct contact from experts, either using telephone, electronic communication and/or visits. Annex 1.5 provides, a copy of the survey form used as the basis for information collection. Respondents were asked to respond verbally with the local expert completing the forms. Responding enterprises were then asked to verify information in writing or by e-mail, where possible and practical. In collecting end-user data as well as data from the refrigeration servicing sector, the equipment involved was further sub-divided into refrigeration equipment above and below 3,000 watt cooling capacity, air conditioning equipment and transport refrigeration equipment.

The survey was supported by the use of statistical data available from the National Statistics Committee related to the inventory of refrigeration equipment of various categories in the country and estimation of numbers of households, commercial trade and food establishments, institutional buildings and facilities, the latter being used to estimate the number of smaller commercial

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<sup>6</sup> It is be noted that this is generally assumed to apply to illegal imports given that China does not currently report issuing any export licenses to Kyrgyzstan.

refrigeration units and A/C units. This methodology was also used in the preliminary HCFC inventory study undertaken in 2009. In summary, this methodology uses the number of units of the categories of equipment noted above to estimate the “bank” of refrigerant in the country.

The key assumptions made for purposes of this analysis were:

- Equipment categories were refrigeration under 3,000 watt cooling capacity, refrigeration equipment over 3,000 watt cooling capacity, air conditioners, and refrigerated trucks.
- The proportion of units of each category using CFCs, HCFCs and HFCs, and ammonia in this survey, by category was estimated based on current survey experience as indicated in Table 3.2 below:

**Table 3.2: Types of refrigerants used by equipment category (2013)**

Equipment Application Category	HC	HCFC	HFC	NH3
Commercial equipment (cooling capacity up to 3,000 watt)	15%	40%	45%	-
Commercial/Industrial equipment, (cooling capacity above 3,000 watt)	0%	38%	50%	12%
Air conditioners	2%	43%	55%	-
Refrigerators on trucks	0%	45%	55%	-
Service of assembled equipment	5%	40%	50%	5%

- The average HCFC refrigerant charge and annual servicing requirements are listed below based on the distribution of equipment and reported service frequencies and leakage rates in derived from survey information<sup>7</sup>. Leakage rates used are generally consistent with published global estimates of equipment emission rates<sup>8</sup>.
- As compared to 2009 survey, HFCs received higher use applications on the market, specifically varying from 10 to 25% in certain categories, that implies the market moves towards newer equipment on HFCs. It is also noted that ammonia systems are present on the market in Kyrgyzstan which was not captured by the previous survey.
- All HCFC based equipment utilizes HCFC-22, based on absence of evidence of blend use from licensing data and information from end and service companies.

<sup>7</sup> Assumed service cycle: Capital repair after operating time of 30,000 hours, and mid-life repair after operating time of 15,000 hours. Two minor repairs of the cycle, each is carried out after the operating time of 7,500 hours. Eight preventive servicing will be carried out after operating time of 2,500 hours. For equipment < 3,000 watts: Average charge size 2 kg. Average requirement of HCFC-22 is 0.65 kilogram per annum for one installation or at an average of 30%. Equipment > 3,000 watts with average charge of 25 kg: the average servicing requirement is 7.5 kilogram or at an average 30% of equipment charge. Air conditioners: At an average charge of 1 kilogram for each installation the service requirement is 0.2 kg of HCFC-22 or an average of 20% of the charge.

<sup>8</sup> IPCC/TEAP Report “Safeguarding the Ozone Layer and the Global Climate System”, 2005 -

[http://www.ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports\\_safeguarding\\_the\\_ozone\\_layer.htm](http://www.ipcc.ch/publications_and_data/publications_and_data_reports_safeguarding_the_ozone_layer.htm)

**Table 3.3: Average refrigerant charge and annual servicing requirement per unit**

Equipment Application Category	Average Charge kg.	Average Annual Required per unit kg.
Commercial equipment (cooling capacity up to 3,000 watt)	2	0.65
Commercial /Industrial equipment (cooling capacity above 3,000 watt)	25	7.5
Air conditioners	1	0.2
Refrigerators on trucks	3-15	3.2

Table 3.4 below provides a summary of the survey results for all sectors. Geographical distribution of HCFC consumption based on the survey results project was as follows: Bishkek (34%), Chuy region (25%), Osh region (16%), Jalalabad region (14%), Issyk-Kul region (6%), Talas region (2%), Naryn region (2%), and Batken region (1%).

**Table 3.4: Summary of Results from Surveys**

Refrigeration Servicing (End User and Service Provider Surveys)			
Equipment Application Category	Units	HCFC Bank (tons)	Annual Service Req.
Commercial equipment (cooling capacity up to 3,000 watt)	12,490	55.10	8.08
Commercial/Industrial equipment (cooling capacity above 3,000 watt)	1,004	27.00	7.26
Air conditioners	56,160	24.15	11.03
Refrigerators on trucks	590	4.70	1.88
Total	70,240	110.95	28.25

From previous HCFC consumption survey made in 2009, only the commercial and industrial equipment line has shown a growth by ca. 300 units, while other categories have experienced a drop with a total differing by approximately 24,000 units (from 94,116 to 70,240 units) which supports the discussion before on HFC trends.

As for other consumption categories, the data below informs on lack of demand for HCFC-141b polyols based on self-conversion of Winterlux company, but a one-time import of HCFC-142b as a mixture with HCFC-22 was observed by a new established company LTD “Daar” which then discontinued the following 2014 year. During that period, LTD “Daar” entered into consultations with the NOC on relocation of their facilities to another province and on technological solutions feasible to replace their needs for HCFC-22/142b.

**Table 3.5: Other ODS consumption**

Other Consumption				
	2010	2011	2012	2013
Service of assembled equipment with HCFC-22	20.87	21.25	21.0	18.2
Imported Fully Formulated Polyol with HCFC-141b	5.96	0	0	0
HCFC-142b for foam production <sup>9</sup>	2.19	0	0	10.3

<sup>9</sup> Imported single time as part of HCFC-22/142b mixture for foam production, by a newly established company (not eligible for MLF funding) that prepared its technological conversion using in-company resources. No such import took place the following 2014 year.



### 3.2 HCFC Supply and Import/Export Profile

Survey information from importers and distributors as well as refrigeration service providers indicates that the supply of HCFCs to the country has historically originated primarily from China, although lesser amounts are received from the UAE (originating in India) and to a small extent from the Russian Federation. The current distribution of imports is the following: China - 80%, UAE - 15%, and India – 5%. Import of fully formulated polyol based on HCFC-141b in the past was mainly from Germany<sup>10</sup> but also was supplied by a system house in Russia. This import has been discontinued and replaced by imports of HFC-based source product.

As noted above, the import of HCFCs from China in particular occurs in relatively small containers, often purchased through distributors filling these containers and who provide limited traceability to original source of production. The importers and distributors in the country are typically relatively small and serve local or regional markets. Additionally, service companies, larger end-users and individual service technicians may import themselves, directly periodically purchasing the material in China and bringing it into the country.

### 3.3 Current HCFC Consumption

Consumption of ozone-depleting substances in the Kyrgyz Republic in 1995 was 104.02 metric tons (92.46 ODP tons). In 2005, as a result of the successful implementation of the Country Programme Phase I, the total consumption of ODSs controlled at that time (excluding HCFCs) decreased to 32.7 metric tons (15.993 ODP tons).

After the completion of the Country Programme Phase II, the CFC consumption was phased out by 1 January 2010, and halons and methyl bromide a year earlier by 1 January 2009.

At the same time, by 2010, the annual consumption of HCFC-22 grew to 75.2 metric tons, HCFC-141b to 7.26 tons, HCFC-142b to 3.0 tons (total 5.13 ODP tons). And, in 2013, the consumption of HCFC-22 amounted to 60.4 metric tons, HCFC-141b - 0 tons, and HCFC-142b – 10.3 tons (as a single time import). This is due to replacement of CFC-12 to HCFC-22 in the cooling sector, and the extensive use of HCFCs in manufacturing of foam insulation materials.

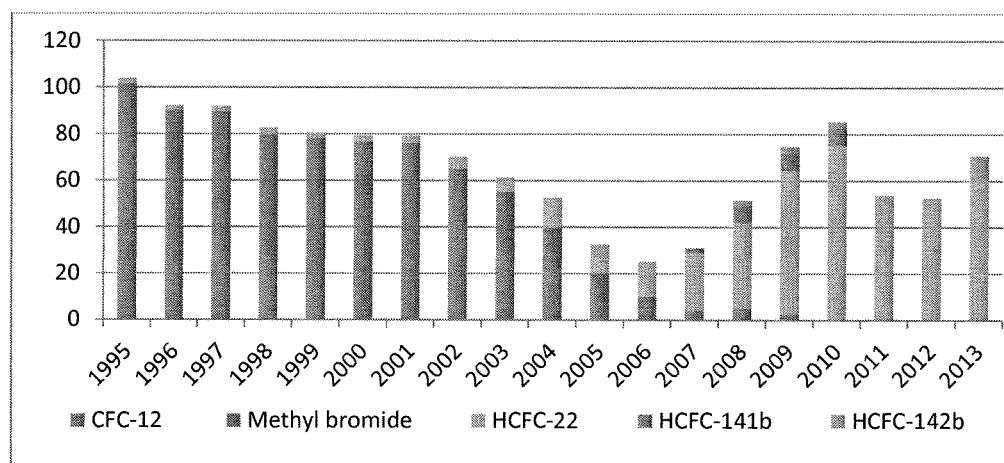
**Table 3.6: Structure of ODS consumption in 2010 as compared to 2013**

Category of equipment application	HCFC consumption 2010/2013	
	Metric tons	ODP tons
Commercial equipment (cooling capacity up to 3,000 watt)	11.80/8.08	0.65/0.44
Commercial/industrial equipment (cooling capacity above 3,000 watt)	10.59/7.26	0.58/0.4
Air-conditioners	16.10/11.03	0.89/0.61
Refrigerated vehicles	2.75/1.88	0.15125/0.103
Service of assembly equipment	33.9/18.2	1.87/1.0
<b>Total consumption of HCFC-22 in the service sector</b>	<b>75.20/46.5</b>	<b>4.14/2.59</b>
Production: insulating panels (HCFC-141b)	7.26/0.00	0.799/0.00
Production: polyurethane (HCFC-142b)	3.00/10.3	0.195/0.67
Production: polyurethane (HCFC-22)	0.00/13.9	0.00/0.76
<b>Total industrial consumption (foam and solvents)</b>	<b>10.26/24.2</b>	<b>0.99/1.43</b>
<b>Total consumption</b>	<b>85.46/70.7</b>	<b>5.13/3.99</b>

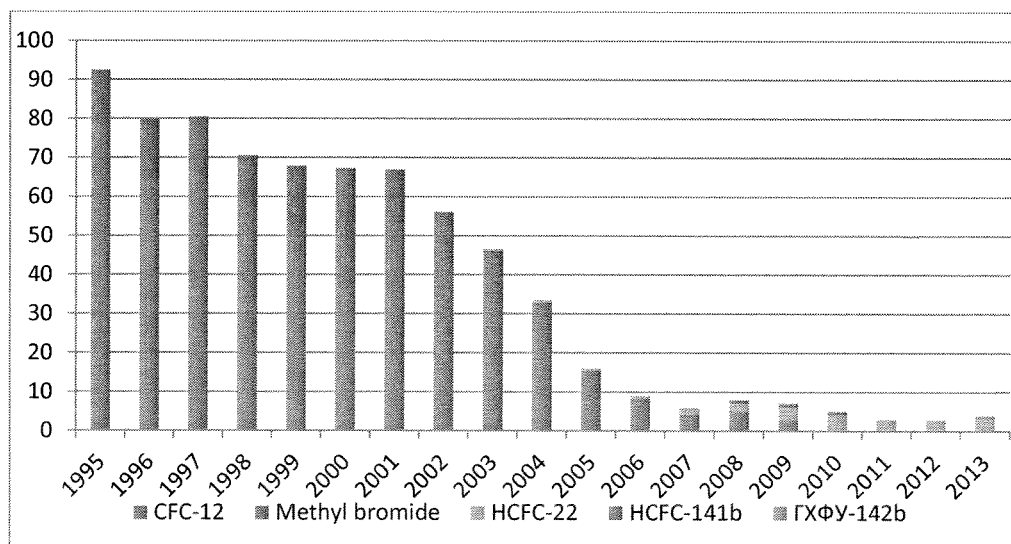
<sup>10</sup> Production of HCFC-141b based fully formulated polyol discontinued in 2014 from this supplier

Additional graphical presentation of ODS consumption data by a number of years from 1995 till 2013 is provided in the following two figures in metric and ODP tons: Figures 3.1 and 3.2.

**Figure 3.1: Dynamics in ODS consumption from 1995 to 2013 (in metric tons)**



**Figure 3.2: Dynamics in ODS consumption from 1995 to 2013 (ODP tons)**



Annex 1.6 provides more details on the quantitative consumption side by ODS chemical from 1995 to 2013 – the data which were used in preparing graphical information in Figures 3.1 and 3.2 above.

Despite the inevitable growth in ODSs consumption coupled with economic growth of the country, the replacement of the main refrigerants on transitional substances with alternatives with smaller ODPs, and introduction of modern servicing practices during the initial two phases

of the Country Programme, both allowed to achieve considerable reduction of ODS dependence in the country.

HCFC consumption in Kyrgyzstan occurs primarily in the refrigeration servicing sector, including filling RAC equipment, which is assembled domestically using imported technological components. HCFC-141b polyols use discontinued at Winterlux company, and no more of HCFC-22/142b mixture has been in import since 2013 for LTD “Daar”. Therefore for purposes of the HPMP-II, all future consumption from 2015 forward is assumed to be HCFC-22. Currently estimated 2014 HCFC consumption based on the recent survey work is summarized in the following Table 3.7 and is utilized as the base consumption for purposes of forecasting and HCFC trend analysis in this HPMP.

**Table 3.7. Estimated HCFC Consumption for 2014 (metric tons)**

<b>Equipment Application Category</b>	<b>Consumption</b>
Commercial refrigeration equipment (cooling capacity up to 3000 watt)	8,1
Commercial/Industrial refrigeration equipment (cooling capacity above 3000 watt)	6,72
Air conditioners	10,88
Refrigerators on trucks	1,76
Service of assembled equipment	15,65
<b>Total Refrigeration Servicing (HCFC-22)</b>	<b>43,11</b>
Manufacturing: Insulating Panels (HCFC-141b, and HCFC-22/HCFC-142b)	0
<b>Total Declared National Consumption (ODS tons)</b>	<b>43.11</b>
<b>Total Declared National Consumption (ODP tons)</b>	<b>2.37</b>

### 3.4 Forecast of HCFC Consumption

In general, the following rationale applies to the forecasts presented for the 2015-2020 period. Based on requirements from the Customs Union on banning imports of HCFC equipment (used or new), sustaining refrigerant consumption growth will be generally driven by progressive decrease in HCFC equipment banks, and a coupled growth in the bank of non-ODS based equipment, primarily imported, with annual increases requiring servicing being reflected of the country's economic performance and anticipated market trends. A similar growth rate can be assumed for the local assembly and filling of refrigeration equipment based on imported components.

In making this assumption, it is recognized that in the same period it would be anticipated that non-article 5 countries' markets (countries of the Customs Union include Belarus, the Russian Federation, Kazakhstan, Armenia and recently Kyrgyzstan) for such equipment would increasingly be closed to new entries of HCFC-based equipment that would result in non-ODS alternatives would generally start to become more readily available and competitive.

**Table 3.8: Forecast HCFC-22 Servicing Consumption**

Equipment Application Category	Forecast HCFC-22 Consumption (MT)									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Commercial equipment (cooling capacity up to 3,000 watt)	11.3	11.2	8.08	8.1	7.58	6.63	4.49	2.33	1.29	0.49
Commercial/Industrial equipment (cooling capacity above 3,000 watt)	9.9	9.3	7.26	6.72	5.8	4.55	3.08	1.61	0.89	0.34
Air conditioners	15.5	13.3	11.08	10.88	10.5	10.4	7.95	4.13	2.29	0.87
Refrigerators on trucks	2.7	2.4	1.88	1.76	1.59	1.28	0.87	0.45	0.25	0.1
Service newly assembled equipment	26.2	19.8	18.2	15.65	11.23	-	-	-	-	-
Total Servicing Sector HCFC Consumption (ODS)	65.6	56	46.5	43.11	36.7	22.86	16.39	8.52	4.72	1.8
Short Term Manufacturing consumption (Foam and Solvent)	-	-	10.26	-	-	-	-	-	-	0
Total Consumption (ODS)	65.6	56	70.7	43.11	36.7	22.86	16.39	8.52	4.72	1.8
Total Consumption (ODP)	3.61	3.08	3.99	2.37	2.01	1.25	0.90	0.46	0.25	0.09

### 3.5 Data Validation

The process of data validation was built into the survey work applicable to estimates of servicing consumption. The assumptions made for purposes of statistical analysis based on banks of equipment being checked for consistency by actual enterprise specific survey information that confirmed things like typical leakage rates (overall annual service demand). The comparison of overall consumption determined by the "bottom up" survey/statistical approach (43.11 tons) correlates well with the "top down" consumption implied by the issued

import licenses and preliminary Customs data information for 2014 which was estimated at 37.3 tons level.

### 3.6 Availability of HCFC Alternatives and Prices

Non-ODS alternatives represented by HFCs and HFC blends are commercially available for all current HCFC applications. The only potential exception is for some high capacity cooling applications such as installations in commercial sectors during the high summer temperatures.

However, readily available commercial equipment alternatives generally use relatively high GWP HFCs. Currently the commercial availability of direct drop-in non-ODS replacements, specific various proprietary HFC blends are using and sharing of experiences with their application. While it is anticipated that wider application of natural refrigerants in new equipment such as carbon dioxide and hydrocarbons will occur in the future these alternatives are not currently offered in the local market and, in the absence of targeted demonstration initiatives, this will likely occur only after these products are better established in developed countries.

All alternatives have affordability barriers either in terms of the capital cost of non-ODS equipment and the cost of refrigerant, or in some cases both. Based on survey results, concerns also exist on the maintenance and repair costs of such equipment.

The Table 3.9 below illustrates representative local market price ranges for refrigerants in use currently, as well as international prices for a number of alternatives not currently available locally.

**Table 3.9: Comparative Indicative Chemical Price Ranges (US\$/kg)**

HCFC-22	HCFC-142b	HCFC-141b	HFC-407c	HFC-410a	HFC-404a
5-6	5-7	5-7	16-17	17-19	16-18
HFC-134a	R-600a	R-717	R-290	N-pentane	C-pentane
15-17	9-11	1-3	9-11	2-4	3-5

Tables 3.10-3.11 provide comparative prices for various common types of equipment using HCFCs and alternatives

**Table 3.10: Comparative Indicative RAC Equipment Cost Ranges (US\$/Unit or System)**

Equipment Description	HCFC	HFC	Other
Domestic Refrigerators (360 l)	n/a (HCFC-22)	300-1,500 (HFC-134a)	300-1,500 (R-600a)
Split System A/C (3 kW)	270-1,000 (HCFC-22)	300-1,500 (HFC-410a)	200-400 (R-290)
A/C units/Heat Pumps (5kW)	400-700 (HCFC-22)	630-2,500 (HFC-410a)	-
Condensing Units (10-16 kW)	1,700-2,000 (HCFC-22)	2,300-6,800 (HFC-404a)	2,500-13,000 (R-717)
Cold Rooms (10-15 kW)	4,200-7,200 (HCFC-22)	5,000-9,000 (HFC-404a)	5,000-10,000 (R-717)
Chillers (120 kW)	17,000 (HCFC-22)	18,000 (suitable blend)	-

**Table 3.11: Comparative Indicative Commercial Sector Equipment Cost Ranges (US\$)**

Equipment Description	Cost/Refrigerant type
Cascade refrigeration unit (2,5-10 kW)	25,000-30,000 (NH <sub>3</sub> /CO <sub>2</sub> )
CO <sub>2</sub> refrigeration unit (2,5-10 kW)	5,000-20,000 (CO <sub>2</sub> )
HFC refrigeration unit (2,5-10 kW)	3,500-4,000 (HFC-404a)

## 4.0 Strategy and Plan for Implementation of HCFC Phase Out

### 4.1 Strategy Framework and Rationale

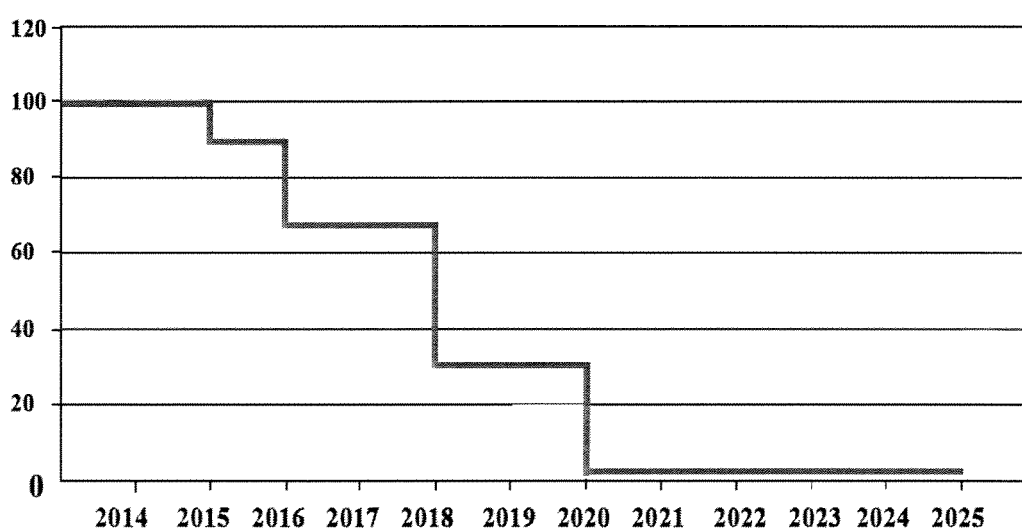
The Government of the Kyrgyz Republic confirms its political commitment to the Montreal Protocol and all its amendments as demonstrated by the complete ratification record and successful CFC phase-out and initial HCFC freeze, and will continue to take active measures to implement all further obligations. Based on the country's joining the Customs Union with the Russian Federation, Belarus, Armenia and Kazakhstan, the HCFC phase-out as compared to the schedule of the Montreal Protocol for Article 5 countries, the HCFC phase-out schedule for the Kyrgyz Republic is adjusted to meet that one of the Customs Union, and is explained in detail further in the text.

The Kyrgyz Republic will fulfill the requirements of the Montreal Protocol on HCFC consumption phase-out in accordance with its adopted accelerated schedule as presented:

- Reduction of HCFC consumption level by 10% compared to the baseline in 2015 (at the level of 3.69 ODP tons) – in line with the Article 5 country's schedule; and with the following adjustments afterwards:
  - ⇒ By 35% compared to the baseline in 2016 (at the level of 2.665 ODP tons);
  - ⇒ By 67.5% compared to the baseline in 2018 (at the level of 1.332 ODP tons);
  - ⇒ By 97.5% compared to the baseline in 2020 (at the level of 0.102 ODP tons);
  - ⇒ Complete HCFC consumption phase-out in 2025.

The following presents graphical information on the new schedule of HCFC phase-out.

**Figure 4.1: Accelerated schedule for HCFC consumption phase-out**



The Government, in line with its obligations under the Montreal Protocol and its amendments, as well as under the Customs Union's requirements, will not allow production, import, export

and re-export of HCFCs, other controlled ODSs and products containing them within, to and from its territory.

The Government will take measures to ban the import of equipment/products containing or using all groups of ODS, with the prime target of HCFCs, from 1 June 2015, and HCFCs in disposable containers weighing less than 13.6 kg from 1 January 2016 onwards.

In doing so, the Government intends to:

- Support modern equipment servicing techniques and approaches, retrofit and decommissioning of refrigeration equipment, including refrigerant recovery and recycling;
- Ensure appropriate stakeholder consultations on the accelerated HCFC phase-out and its impacts on HCFC end-users;
- Consider a possibility of introducing economic incentives to support the use of alternatives of ozone-depleting substances;
- Strengthen bilateral and international cooperation in the region to prevent illegal trade in ozone-depleting substances, and HCFCs in particular;
- Minimize potential adverse impacts of the accelerated HCFC phase due to expected excessive stockpiling attempts for HCFCs for servicing and equipment assembly needs;
- Continue with essential and up-to-date training programs for technicians servicing refrigeration equipment, as well as personnel of Customs and border services, financial police to prevent cases of illegal trade during HCFCs movements within the area of the Customs Union;
- Maintain and strengthen the institutional capacity to manage and control actions for the Country Programme implementation;
- Continue efforts to increase public awareness in the field of preservation of the ozone layer.

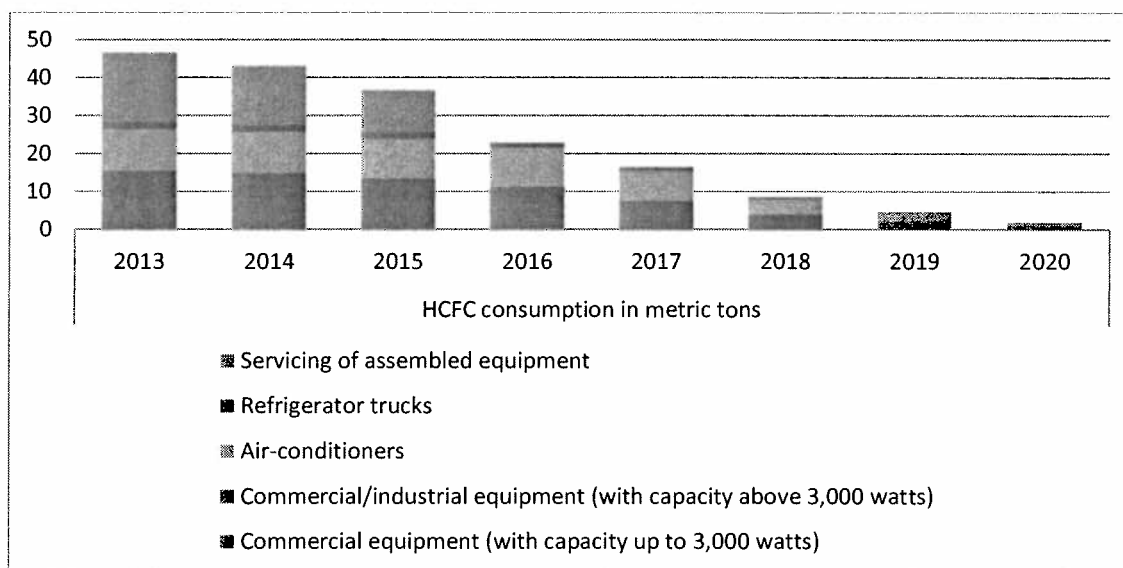
The Government also seriously considers introduction of HFC controls, as well as complete phase-out of methyl bromide consumption in the QPS applications, as the next set of important work directly linked or at present associated with the Montreal Protocol.

All planned activities under the Country Programme will be carried out in coordination with other environmental international agreements such as the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal which relate to ODS waste, as an example, and other associated MEAs such as the UNFCCC.



Figure 4.2 below provides a graphical representation of the proposed accelerated HCFC phase-out schedule.

**Figure 4.2: Kyrgyzstan's HCFC Phase-out Strategy Compliance Graph (ODP tons)**



Overall, the strategic objectives proposed under the HPMP-II can be summarized in the following manner:

- To sustain progressive reduction in HCFC consumption to 2.665 ODP tons in 2016, 1.332 ODP tons in 2018, 0.102 tons in 2020 leaving servicing tail with complete phase-out in 2025;
- To apply and make best use, to a maximum degree practical, HCFC replacement technologies that minimize impacts on the climate system;
- To achieve these objectives in such a way as to minimize adverse economic and social impacts, particularly in the vulnerable sectors and groups of population.

## 4.2 Description of HPMP-II Action Plan and Activities

The nationally driven HCFC phase out process requires practical implementation of the Country Programme through the following important strategy's elements.

**Increasing ability to control imports:** It is necessary to develop and adopt a regional multilateral agreement (Kyrgyz Republic, Russian Federation, Kazakhstan, Armenia and Belarus) on controlling movements and registering ODSs, and in particular HCFCs and products containing them, in trade operations within the area of the Customs Union. In addition, it is planned to develop an electronic system to control HCFC imports from countries outside of the Customs Union area, and maintaining a common Customs Union's database for:

- Importers of HCFCs and their products;
- Business entities engaged in wholesale trade;
- Business entities - owners of equipment containing HCFCs; and
- Business entities engaged in maintenance and repair of equipment containing HCFCs.

**Restrictions in regulation of HCFC consumption:** For business entities - owners of equipment containing HCFCs, analysis of the implementation of specific requirements and conditions to reduce the consumption of ODS is planned, and the following activities are suggested for implementation:

- Development of measures to prohibit imports of HCFC-containing equipment;
- Introduction of limitations on HCFC containers (cylinders) size during HCFCs imports in bulk, and bans on the use of disposable containers in the country, including at retail level and end-use.
- Processing and adaptation of standards related to equipment servicing records and refrigerants handling (logbooks) - this will apply to rules on record keeping on equipment maintenance, and HCFC charging, requirements for qualification/verification of knowledge of technical personnel engaged in maintenance of equipment;
- A cadaster of technological processes and equipment working with ozone-depleting substances and (or) their substitutes.

**Enhancement of technical, educational and institutional capacity:** Provides for a detailed assessment of law enforcement practices of legislation on the protection of the ozone layer and the formation of amendments and supplements to the Law of the Kyrgyz Republic "On the Protection of the Ozone Layer", development of guidelines for market circulation of ODSs, in order to form more precise rules applicable to best practices in sound HCFC and HCFC-containing equipment management on the local market.

It is planned to conduct seminars, training activities for customs (border crossings and checkpoints) and environmental enforcement officers, specialists in repair and maintenance of refrigeration units, to familiarize with the requirements in normative legal acts, including

technical normative legal acts to the rules (order) of import control, regulation of final HCFC consumption, customs control, preventing illegal trade in ODS and container mislabeling.

Training programs of Customs inspectors and those who have control in the field of environmental protection will be included in the curricula of relevant institutions of higher and vocational education and training (National Technical University, technical high schools). These institutions are expected to receive sets of essential modern teaching equipment (multimedia boards, notebooks/printers/scanners), standard tools and instruments for developing practical skills for refrigeration equipment repair and maintenance.

Customs authorities, laboratories (analytical control) performing measurements in the field of environmental protection, will be provided with necessary portable multi-gas identifiers to detect and analyze the full range of ODSs, in particular HCFCs, and HFCs. Practical guidelines for marking and labeling of controlled ODS, to information exchange procedures, will be formulated and disseminated.

It is also planned to adapt European Union's standards (regulations) on modern HCFC bank management practices when servicing equipment with residual operating lifecycle to minimize the need for additional charging. This will serve to reduce leaks, increase recovery, recycling and re-use rates, and will also contribute to optimized, and eventually reduced energy consumption.

Such approach will require technical specialists trained to work with modern equipment and servicing tools, and the existing training schemes will need to be updated with current knowledge based on technology market developments and the need to practically simplify certification system for its better performance and coverage of technical staff. This will be supported by translation and adaptation of training guidelines on applicable control measures, Customs procedures and checks, improving effectiveness of HCFC licensing and coupling of HCFC phase-out with better energy-efficiency issues.

It is expected to adopt additional measures to raise awareness and ensure regular stakeholder consultations on import bans of HCFC-containing equipment, introduction of technologies (installations) that allow for recovery, recycling, reclamation of ozone-depleting substances, and introduce technologies that use alternatives to HCFCs, with a view to minimize the impact of HCFC substitutes from energy-efficiency and GWP side.

**Development of HCFC management, re-use and disposal system:** Servicing sector requires re-tooling with modern instruments and HCFC processing equipment, especially where currently outdated equipment and tools supplied under RMP are in daily residual use. This component is related to further development of such technical capacity and possibilities to improve the quality of servicing refrigeration equipment. HCFC refrigerants management, ultimately, will help reduce the demand for import through:

- Improvement of recovery and recycling of refrigerants (application of best HCFC handling practices and incentives for collection): provision of qualified technical personnel with modern equipment for R/R purposes, including reclaim and GC quality support, along with standard tools and leak detection equipment;

- Strengthening technical capabilities of existing service centers on disposal, recycling and recovery (recovery)/storage and destruction of ozone-depleting substances;
- Compliance with new re-fillable containers for HCFC imports that will have positive impact on reducing disposable tanks in the country and supporting best environmental practices with HCFCs handling, including centralized, though still manual due to market size, distribution of refrigerants in the country. This will facilitate import monitoring, reduce HCFC leaks from containers, and to some extent relieve a growing ODS waste problem.
- Supporting safe storage and disposal capacity for end-of-life ODSs<sup>11</sup> requires development and implementation of appropriate economic measures for collection and transfer of ODSs for recycling, and where unusable anymore, storage and follow-on disposal.

**Demonstration of alternative technologies through retrofit/replacement and local assembly of imported components:** Such demo-projects will help reduce barriers to adopt newer non-HCFC technologies in the context of HCFC phase-out and bans on the equipment import at the national level by better understanding supply markets, operational efficiency, retrofit/assembly and maintenance costs. Proposed activities will focus on a mixture of (1) end-user incentive programmes related to retrofits/replacements of commercial/industrial HCFC-based equipment to non-HCFCs available at that time on the markets, and (2) demonstrating of local capacity for equipment assembly through imported components where emphasis will be on natural refrigerants (carbon dioxide, ammonia), with installation at pilot sites and monitoring of performance in varying climatic conditions.

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<sup>11</sup> The Government will approach the MLF for a separate project once funding windows allow for such pilots.

In the following sections describe in more detail various measures as outlined here for the full HPMP-II duration, and by implementing agency participating in its formulation and future implementation, followed by description of funding being requested for Tranche 1. The overall HPMP-II costs are divided into two categories as explained below, and split between UNEP and UNDP implementing agencies:

**Cost Category 1: Non-Investment Activities (UNEP - US\$ 312,000 in MLF funding)**

This covers what would be considered costs required for the needs to ensure that capacity would be sustainable. MLF funding requested will be distributed between legislation/regulatory development, customs and enforcement officers training, refrigeration servicing training, and monitoring of HPMP-II activities.

**Cost Category 2: Investment Projects (UNDP - US\$ 400,000 in MLF funding)**

This principal investment section will address the physical capacity requirements associated with the need to upgrade the country's refrigeration servicing capability and will be closely coordinated with UNEP's non-investment component. The second part of financing request will relate to end-user awareness and incentive programme on non-ODS retrofits/replacements, and demonstration programme for a local assembly of HCFC-free and primarily natural refrigerants based technologies with imported components and their field testing.

Activities /project	Responsible agency	Estimated costs US \$
<b>Non-Investment Component (UNEP): Legal/Regulatory Commitments, Technical Capacity Strengthening and Monitoring</b>		
<b>Legal and Regulatory Actions</b>		
Regulatory updates in HCFC control frameworks	UNEP	\$96,000
<b>Technical Capacity Building</b>		
Strengthening the capacity in management/prevention of illegal trade	UNEP	\$81,000
Strengthening the capacity in the refrigeration sector	UNEP	\$106,000
Monitoring of activities under HPMP stage 2	UNEP	\$29,000
<b>Overall UNEP (all tranches)</b>		<b>\$312,000</b>
<b>Investment Component (UNDP): Improved HCFC Management and Alternatives Demonstration Projects</b>		
<b>Improvement of vocational training capacity and HCFC management, re-use and distribution system</b>		
Equipment and tools supply for servicing centers/individual entrepreneurs	UNDP	\$80,000
Training equipment and service tools supply to training centers and vocational schools	UNDP	\$120,000
HCFC manual distribution system	UNDP	\$20,000
<b>Demonstration of alternative technologies through retrofit/replacement and local assembly of imported components</b>		
End-user awareness and incentive component	UNDP	\$90,000
Demonstration of alternative technologies via local assembly	UNDP	\$90,000
<b>Overall UNDP (all tranches)</b>		<b>\$400,000</b>
<b>Total HPMP Stage 2</b>		<b>\$712,000</b>

Annex 1.7 provides an overall schedule for HPMP action plan implementation.

#### 4.2.1. Non-Investment Component (UNEP): Legal and Regulatory Commitments, Technical Capacity Strengthening and Monitoring

Non-investment activities - UNEP	Budget (US\$)
<b>Legal and Regulatory Actions</b>	
Regulatory updates in HCFC control framework including development of the State strategy concept for promotion of ozone-friendly refrigerants, including ammonia and carbon dioxide	\$96,000
<b>Technical Capacity Building</b>	
Strengthening capacity in management/prevention of illegal trade	\$81,000
Strengthening capacity in the refrigeration sector through the introduction of mandatory certification scheme, development of modern RAC standards (natural refrigerants), update of existing log books and training of RAC technicians and other stakeholders	\$106,000
Monitoring of activities under HPMP stage 2	\$29,000
<b>Overall UNEP (all tranches)</b>	<b>\$312,000</b>

#### Legal and Regulatory Actions

##### Regulatory updates in HCFC control framework

As described before, Kyrgyzstan developed a basic legal and regulatory framework for the control of ODS which underpins maintaining compliance with its current obligations under the MP. However, to meet HCFC complete phase out obligations this will require enhancement and expansion. At the same time, it is also recognized that this is not an instantaneous process and cannot be done arbitrarily, particularly when they may have significant social and economic implications, as well as the need to align them with overall government policy. Therefore the action plan in each case includes provision for appropriate consultation and awareness activities in advance of adoption and on an ongoing basis to ensure they are fully implemented.

This component assists interested bodies of executive power in drafting necessary legal documents, industry and government programs and action plans, and such documents will help to solve the following issues such as:

- Licensing and quotas for HCFC imports, strengthening customs control;
- Bans on imports of equipment containing HCFCs;
- Organization of controls of HCFC use;
- Disposal of HCFC in both large and ordinary objects;
- Promote the use of ozone-friendly refrigerants, including ammonia and carbon dioxide;
- Training and mandatory certification of specialists working with refrigerants.

Development of the State strategy concept for promotion of ozone-friendly refrigerants, including ammonia and carbon dioxide: The main issue is that Kyrgyzstan has a limited experiences in handling some of these refrigerants since there is a lack of knowledge among mechanical engineers, RAC technicians and end-users. This is due to limited access to the

equipment, especially with HCs, CO<sub>2</sub> and low-GWP HFCs such as HFOs and access to the information safety matters, design issues, general expertise as well as availability of spare parts etc. It should be noted that there are little or no research and development activities within the country to build up (internal) confidence in working directly with natural refrigerants, specifically in larger and more complicated types of systems. Therefore, the goal of this of the State strategy concept will be to improve the competitiveness of the natural refrigerants and low-GWP HFCs in comparison with ODSs and HFCs.

Import control of equipment using HCFCs: Given that the presence of equipment using HCFC, is a major factor of consumption, in order to reduce the total amount of equipment using HCFCs, to prevent the process of dumping on by developed countries, it is necessary, from 1 January 2016, in accordance with the requirements of the Customs Union, to prohibit import and control the importation of such equipment through the use of mechanisms of customs and licensing control.

Expansion of the system of ODS import licensing by ensuring mandatory Prior Informed Consent (PIC) procedure with legal effect for the import of ODS, in particular HCFCs: Given that Kyrgyzstan borders with China, which is a major producer of HCFCs and equipment containing HCFCs, improving the efficiency of the system of import controls is a necessary step. One of the gain of the system is the implementation of prior informed consent procedure before issuing import licenses and the actual receipt of ODS in the country.

Restrictions on the amount of imported HCFC containers: Currently, the import and supply of HCFCs is produced in small disposable containers, the import of which is difficult to control. To solve this problem, it is necessary, in accordance with the legislation of the Customs Union, from 1 January 2016, ban the imports of refrigerants in single-use containers.

Implementation of the rules on refrigerants management: To improve the efficiency of action to reduce HCFC consumption, it is necessary to adopt strict rules to manage refrigerants in sphere of large-scale assembly using modern practices adopted for equipment containing HCFCs and practices for equipment using industrial greenhouse gases, in particular HFCs, which requires the implementation of assembly recording system, definitive record-keeping, which would reflect the detailed history of service and qualification requirements imposed during maintenance of equipment.

Restrictions on the import of HFCs and control of its use: In process of design and implementation of these measures, it can also be considered to expand the control of the import of HFCs and equipment containing HFCs, as well as application of the rules of refrigerants management in relation to equipment containing HFCs according to the technology practice of advanced countries.

Introduction of ban on the import and or use of HCFC-141b and HCFC 142b: In order to give substance to the underpinning assumption that the HCFCs used in the country after May 2015

are HCFC-22 for refrigeration servicing, the ban on import of all other HCFCs to be consistent with ExCom Decision 61/47<sup>12</sup> will come into effect.

Additionally, supplementary measures as described below may be added to the HPMP action plan depending on the compliance performance achieved as phase out progresses. This also assumes that there is timely availability of required financial resources to support their development and implementation, and that they are acceptable to the Government within its overall policy priorities.

- **Refrigerant Management Regulations:** In support of an upgraded refrigeration servicing system, the progressive adoption of strict refrigerant management regulations applicable to larger installations could be pursued. This would require registration of installations, mandatory log books being maintained detailing servicing history, banning of venting of refrigerant, and qualification requirements imposed on technicians servicing the equipment. The timing of implementing these measures would be dependent on progress upgrading refrigeration servicing capacity within an overall refrigerant management system, and recognizing the administrative and enforcement intensity of implementing such measures would be subject to having resources available to pursue it.

<b>Activities</b>	<b>Budget (US\$)</b>
National legislation experts for development of regulatory acts	\$40,000
National experts for development of the of the State strategy concept for promotion of ozone-friendly refrigerants, including ammonia and carbon dioxide	\$20,000
Stakeholders consultation meetings (5 workshops for 20-25 participants, in total 100-125 participants) \$4,000 per workshop	\$20,000
TA for design of ODS import licensing mandatory prior informed consent system	\$16,000
<b>Total</b>	<b>\$96,000</b>

<sup>12</sup><http://www.multilateralfund.org/files/61/6158.pdf> (Page 30/31)



## **Technical Capacity Building**

### **Strengthening capacity in management/prevention of illegal trade**

Based on successful experience of the previous phases of the Country Programme, it is necessary to ensure the integrity of the existing system of licensing and import controls, which has proved to be quite effective. Particular attention should be given to support and strengthen the capacity of the State Customs Service, State Border Service at the state border areas not covered by the customs control, the State Inspectorate for environmental and technical safety and the Financial Police of the Kyrgyz Republic to address priority needs related to HCFC phase-out and avoid the risk of illegal trade in ODS within the Customs Union Member States. There is an urgent need to continue training of new staff, as well as improve existing qualifications in the field of administrative control of HCFCs and equipment containing HCFCs.

Given the high turnover of front line customs officers as well as other enforcement officers, the process has to be repeated on a regular bases. At present, the NOU undertakes upon request as part of entry level staff and refresher courses undertaken by the State Customs Committee. However, there is a need to establish this process on a permanent basis to ensure it is sustainable.

The approach proposed is focused on four specific areas:

- Expanding the level of coordination between the NOU and customs authorities respecting: i) methodologies where by customs codes can be better distinguished between and among those items of specific interest (i.e. HCFC chemicals, HCFC containing equipment/products) and other imports; ii) preparation of practical instructions on labeling and designations of items being controlled; iii) development of streamlined reporting and information exchange procedures; and iv) evaluation of trends in imported HCFC based equipment/products for statistical purposes.
- Initial program of training of present front line customs and environmental enforcement officers to upgrade both their knowledge level and effectiveness.
- Development and implementation of more formal curriculum modules for customs and environmental enforcement officer training, both entry and renewal, to be embedded in the customs and environmental authority's training institutions and programs, inclusive of "train the trainers" activities, supply of Russian language course materials, and demonstration equipment.
- One of the most important aspect is the special training for enforcement officers (environment inspectors, financial police and state border service) which is becoming very urgent as the country joins the Customs Union. This training will facilitate the exchange of views and consultations between the NOU, customs officers and enforcement officers (environment inspectors, financial police and state border service) on monitoring and controlling the import/consumption of HCFCs and other ODSs;

The first training priority will be training of existing front line customs and environmental enforcement officials in two phases starting from 2015 as the various import and

application controls are prepared and come into force in 2015-2020. The development of a sustainable ongoing training capacity will start with development work in 2015 and be targeted for implementation on an annual basis starting from 2016.

Under Stage 2 of HPMP, it is proposed to organize the training for up to one hundred (100) customs and other enforcement officers.

<b>Activities</b>	<b>Budget (US\$)</b>
Training of Customs and other enforcement officers (10 workshops of 2 days each for 10 officers covering whole country. Total 100 customs and other enforcement officers). \$4,000 per workshop	\$40,000
TA for development of customs codes, labeling standards, handbooks in Kyrgyz/Russian languages, support in information exchange etc.	\$41,000
<b>Total</b>	<b>\$81,000</b>

### **Strengthening capacity in the refrigeration sector**

This measure defines the importance of maintaining the system of training and mandatory certification of specialists for servicing refrigeration as well as building work on management of HCFC and alternatives that will be implemented, including increased use of natural refrigerants. The most important requirement is to be able to support and maintain the current bank of HCFC-containing equipment. System of training in modern methods of maintenance of cooling equipment will reduce leakage during maintenance and recovery of refrigerants.

The objective of the component is to reduce the consumption of HCFCs in the refrigeration sector by training technicians in good practices in refrigeration and air-conditioning sectors and to assist Kyrgyz Republic in phasing out of HCFCs consumption by 2020. In spite of the fact that the Training programme has been successfully implemented in the country under HPMP stage 1 there is a considerable shortage of skilled trainers as well as technicians in the country.

It is important to take into account that the end-users should move step by step from HCFCs to natural refrigerants such as Hydrocarbons (flammability), CO<sub>2</sub> (hi pressures) and Ammonia (toxicity) in order to avoid the use of HFC, and, therefore, refrigeration technicians should be provided with the relevant information and skills allowing them to handle the transition period through increased focus on energy efficiency (with more complex solutions) to reduce carbon footprint.

It is important to emphasize that alternative flammable refrigerants and in particular HCs can pose a risk of fire and explosion if designed and used improperly. Whilst basic safety standards are available, they do not necessarily cover materials suitable for addressing certain significant matters such as techniques for reducing refrigerant charge, design and operation of safety systems and methods and results for risk assessment. The Kyrgyz Republic emphasizes the need to introduce modern safety standards - for design, construction and installation of RAC products and systems as well as performance standards – for determining the efficiency and performance of RAC systems and equipment, as well as for refrigerants. The implementation of appropriate standards to cover the various aspects of the equipment, chemicals and servicing is therefore very important to ensure quality, efficiency and safety.

In Kyrgyzstan, there is a shortage of relevant information on these matters. The Kyrgyz Republic understands that standards should be adapted for national conditions by the relevant national experts in order to make them more suitable for local conditions. Provision of suitable

standards are therefore one important measures of assisting end-users to transition away from HCFCs.

Furthermore, the national training programmes will need to integrate a comprehensive approach on safe handling of flammable refrigerants and understanding of related regulations and standards enhancing the capacity of the training institutes, and providing updated and specialized training for trainers and targeted audiences. Training on installation, operation, maintenance and disposal of equipment using flammable substances should be a subject for training courses.

Currently, the estimated number of active technicians is 150 working directly for end users and organized service enterprises with 500 being individual operators, many with limited training. Recognizing the annual replacement requirement of approximately 150 technicians per year, it is also imperative that the current good capacity to continuously train both existing and new technicians be maintained.

One of the important developments is strengthening the human capacity in RAC sector through the mandatory certification of specialists in refrigeration sector, as well as capacity of handling of HCFCs and alternatives that will be introduced, including greater use of natural refrigerants. The mandatory certification system is an efficient method of maintenance of cooling equipment which will allow to reduce leakage during maintenance and recovery of refrigerants. The Government of Kyrgyzstan will introduce the mandatory certification scheme. This certificate will allow RAC technicians to have an access to the maintenance of the RAC equipment operating on HCFC, HFCs and natural refrigerants (CO<sub>2</sub>, ammonia and HC). The special two weeks mandatory training will be organized in the special centers for certification. The centers have already received the license from the Ministry of Education to organize the training of RAC technicians. The cost of the training will be paid by RAC technicians and this system will ensure the sustainability of activities. It should be also highlighted that the Government will introduce the requirement that the certificate can be obtained only after participation in the training of Good Practices in the refrigeration sector organized by the NOU.

The country has already introduced refrigerants log-book for refrigeration technicians (HCFC equipment charged with more than 3 kg of refrigerant) on a voluntary basis. This activity has assisted to improve data collection on the use of refrigerants while servicing the refrigeration equipment. The country intends to introduce the state mandatory register of ODSs and alternatives. In this regard, the country requested the assistance in providing the training of managers of companies/end-users on the implementation of requirements of the state mandatory register of ODSs and alternatives. The NOU will organize 4 training workshops in regions of Kyrgyzstan and 80 representatives of companies will be trained in total (4 workshops X 20 participants).

As the country goes towards the total phase out by 2020, Kyrgyz Republic needs to increase the effectiveness of actions for reducing HCFC consumption and, consequently, it is necessary to adopt strict rules (technical regulations) in refrigerant management with the use of modern practices adopted for equipment containing HCFCs and practices for equipment using industrial greenhouse gases, especially HFCs, which requires introduction of accounting assembly system, obligatory logbooks (starting from 2018), which would reflect a detailed history of service and qualification requirements imposed during maintenance of equipment. Another important direction is the linking the concept of sustainable buildings to HPMP implementation and promoting the cooperation of city planners / architects with building engineers to design integrated solutions for heating & cooling of buildings. The choice of the HVAC technology should be ozone- and climate-friendly taking into account building

constraints. In Kyrgyzstan, replacement for HCFC systems are often based on hydrofluorocarbons (HFCs) and the country considers the ways for introduction of ozone- and climate-friendly technology options including the use of ozone- and climate-friendly refrigerants (e.g. natural refrigerants), energy-efficient technologies (e.g. optimized design, performance monitoring), integrated heating & cooling solutions (e.g. linking production of cold and heat), not-in-kind technologies (e.g. free-cooling, absorption), use of waste heat or renewable energies (e.g. heat pumps), district heating & cooling etc. The technology choice has direct implications on the design of sustainable buildings and vice-versa.

The country proposes to organize two national workshops for building planners & architects who can work with HVAC experts at the early design stage of sustainable buildings. In total, 50 building planners & architects/experts will be trained.

Generally, the capacity strengthening would require the following activities which are essential for the country:

- Initial refresher training for existing qualified technicians with emphasis on HCFCs and modern maintenance and refrigeration management practices.
- Introduction of the modern standards to assist the introduction of the low GWP alternatives to HCFCs.
- Introduction of the mandatory certifications scheme for refrigeration technicians and mandatory log books.
- Upgrade nationally supported formal entry level and refresher refrigeration training capacity specifically for management of HCFCs and ODSs alternatives such as natural refrigerants.
- Support to strengthen the refrigeration association with sustaining capability to act as a technical information dissemination vehicle, focal point for international networking on alternatives and modern practice and ongoing training facilitation.

<b>Activities</b>	<b>Budget (US\$)</b>
National Experts for training workshops in the refrigeration sector	\$5,000
National Experts for design of the mandatory certification scheme	\$10,000
National Experts for appropriate modern RAC standards (natural refrigerants) and update of existing log books	\$10,000
Training workshops for refrigeration technicians (10 workshops of 2 days each for up to 15 technicians covering whole country 150 participants)/\$4,000 per workshop	\$40,000
Training workshops for managers of companies on state register of ODSs and alternatives (4 workshops X 20 participants – 80 participants)/\$4,000 per workshop	\$16,000
Two national workshops for building planners & architects (one day each, total 50 participants) \$5,000 per workshop	\$10,000
TA for development of training materials, a handbook for safety application of natural refrigerants in Kyrgyz/Russian languages etc.	\$15,000
<b>Total</b>	<b>\$106,000</b>

### **Monitoring of activities**

An essential element of the Program to phase-out consumption of ozone-depleting substances is to monitor its implementation, which is to control the timing of individual measures, periodic interaction with organizations involved on mechanisms of implementation and regularly review of the effectiveness of the implementation of individual actions, preparation of data for recording and reporting in accordance with the requirements of the Montreal Protocol.

In Kyrgyz Republic, the HPMP will be implemented by the NOU which is operating under the State Agency on Environmental Protection and Forestry within the Government of the Kyrgyz Republic. This involves the following: participate in the implementation of components and activities funded by the MLF, formulation of guidelines and regulations as required for policy implementation, support to public awareness activities and, interaction with other ministries, stakeholders.

In order to achieve the targets set out in the HPMP it is essential that monitoring of the implementation of the proposed measures is carried out. The expected monitoring activities will include the following: (1) effective monitoring and evaluation of all components of the HPMPs to be assured, (2) project activities will be kept on schedule, (3) progress towards objectives can be measured, and (4) project problems will be identified and remedied.

<b>Activities</b>	<b>Budget (US\$)</b>
National Consultants to monitor the implementation of HPMP activities	\$29,000
<b>Total</b>	<b>\$29,000</b>

#### 4.2.2 Investment Component (UNDP): Improved HCFC Management and Alternatives Demonstration Projects

Investment Activities - UNDP	Budget (US\$)
<b>Improvement of vocational training capacity and HCFC management, re-use and distribution system</b>	
Equipment and tools supply for servicing centers/individual entrepreneurs	\$80,000
Training equipment and service tools supply to training centers and vocational	\$120,000
HCFC manual distribution system	\$20,000
<b>Sub-total</b>	<b>\$220,000</b>
<b>Demonstration of alternative technologies through retrofit/replacement and local assembly of imported components</b>	
End-user awareness and incentive component	\$90,000
Demonstration of alternative technologies via local assembly	\$90,000
<b>Sub-total</b>	<b>\$180,000</b>
<b>Overall UNDP (all tranches)</b>	<b>\$400,000</b>

#### **Improvement of vocational training capacity and HCFC management, re-use and distribution system:**

This principal, priority investment component addresses the physical capacity requirements associated with the urgent need to upgrade the country's refrigeration servicing capability, and training tools to be set a number of vocational schools in the north and south of the country.

This is in continuation of the initial assistance initiated during HPMP Stage I would be on ensuring that additional refrigerant recovery equipment and tools are supplied. At the same time, it is intended to equip existing training centers and vocational schools with multimedia training tools and practical servicing instruments to link to the theoretical subjects included the curricula, and coordination will be established between the schools and the actual employers of technicians represented by servicing centers.

This sub-component in part would target additional incremental increase in the coverage of service centers and individual entrepreneurs (technicians) with tools to the extent allowed by the funding available. In making these investments it is recognized that a close linkage exists to UNEP supported training and certification initiatives. It will also need to be subject to economic viability assessment and strict monitoring if equipment supply and its ultimate utilization. And, the existing training platform consisting of six (6) vocational schools and four (4) training centers two of which belong to the National Refrigeration Association, and two others associated with the Technical Safety Oversight Board on industrial safety issues. In terms of geographical coverage, the sub-component covers all main northern and southern provinces.

This will also involve piloting of HCFC-gas distribution system, as the country is preparing to introduce a ban on single-use gas containers during import. This was elaborated on in the previous HPMP Stage I document, but was not proposed for MLF financing.

Based on field surveys and interviews with key HCFC importers, it was agreed that this is essential, but no automatic lines for refrigerant re-filling from larger (1 tons) containers would be justified in the current economic and market-size circumstances and that manual approach with special charging stations and scales would represent the best way forward to assess the preparedness of the market for more advanced methods in HCFC imports and distribution in future. If proven successful, the market will signal to the main importers about the need to expand in this area through local complementary investments, and specifically in the regional perspective with populated southern provinces of Kazakhstan.

It is noted that significant benefits can be obtained by requiring refrigerant to be imported in bulk – as promoted by the Customs Union’s rules - and transferred to smaller refillable containers for sale and distribution for servicing applications. This can facilitate greater import control and reduces emissions by avoiding residual refrigerant in single-use containers, as well as increase the local value-added contribution to the business. To do this, modest investment in refrigerant distribution infrastructure in the form of transfer and handling equipment as well as containers may be required.

The existing HCFC importers/distributors and larger service organizations will be officially notified and invited to make proposals for establishment of a centralized distribution center through a bidding exercise for two (2) locations. The tools will be distributed on the basis of evaluations of proposals in terms of capacity and investment proposed.

<b>Activities</b>	<b>Budget (US\$)</b>
<b>Equipment and tools supply for servicing centers/individual entrepreneurs<sup>13</sup></b>	
Recovery and recycling machine on oil-less compressor and 2 cylinders each, gauge manifold, electronic scales, charging station for natural refrigerants, tools - US\$ 5,000 by 11 locations	\$55,000
Reclaim machine with 3 cylinders each, advanced multi-gas analyzer, tools - US\$ 15,000 by 1 location combined with PE Kurbanov where the reclaim center is to be created	\$15,000
National expert for distribution and HCFC recovery reporting	\$10,000
<b>Sub-total</b>	<b>\$80,000</b>
<b>Training equipment/service tools supply to training centers and vocational schools</b>	

<sup>13</sup> LTD “SJT”, LTD “Arto”, PE Rahmatov, PE Kojomberdiev, PE Garifulin, PE Karachev, PE Akimenko, PE Kurbanov, LTD “CHolponatinsk techcenter”, PE Maarazykov, PE Taimatov

Multimedia training equipment including multimedia boards, laptops, scanners/printers (10 sets for 6 vocational schools and 4 training centers) <sup>14</sup> – US\$ 4,000 each by 10 locations	\$40,000
Training R/R/R equipment and standard tools for training (charging station for natural refrigerants, welding and vacuum test stand, multi-gas analyzer (basic), reclaim machine with 3 cylinders, Lockring tools) – US\$ 7,000 each by 10 locations	\$70,000
National expert for distribution and monitoring of use	\$10,000
<b>Sub-total</b>	<b>\$120,000</b>
<b>HCFC manual distribution system</b>	
HCFC charging equipment with weights, hoses, instruments, 3 large cylinders each set – US\$ 10,000 by 2 locations	\$20,000
<b>Sub-total</b>	<b>\$20,000</b>
<b>Total</b>	<b>\$220,000</b>

### **Demonstration of alternative technologies through retrofit/replacement and local assembly of imported components**

This sub-component is featured by two (2) parts:

- End-user awareness and incentive component
- Demonstration of alternative technologies via local assembly

Both will be launched later in HPMP-II after Tranche 1 which will provide more time for some of still emerging technologies to mature better and demonstrate lower capital costs. Approximate timing when this can be launched fully is after 2017.

The first part (end-user incentives) builds on previous experience in TPMP time on end-user incentive programme, which was excluded from consideration being too early scheduled in HPMP Stage I, and now proposed to help reduce barriers to adopt newer technologies at the national level by better understanding supply markets, operational efficiency, retrofit/assembly and maintenance costs. This would involve introduction of drop-ins refrigerants to minimize the retrofit costs, replacement of equipment using non-HCFC refrigerants to demonstrate newer technological developments on the markets, and their affordability.

Implementation will involve an initial step of the NOC and the National Consultant supervising and coordinating the program promoting the availability of the program with end users. This will utilize the end user network established during HPMP survey work and will have the active involvement of the National Refrigeration Association. Workshops for prospective applicants will be used to explain the process and application procedures.

Applications from interested enterprises will be made using official Application Forms available at the National Ozone Center and when completed, together with all the necessary supporting documentation, will be submitted to the NOC. A dedicated National Consultant in

<sup>14</sup> Vocational schools with Refrigeration faculty identified during HPMP formulation work: # 3, 6, 93, 94 in Bishkek, # 1 in Jalal-Abad, and # 12 in Osh; and Training centers: National Refrigeration Association

“EcoHolod” centers in Bishkek and Osh (2 centers), and “TechnoTreningCenter” centers in Bishkek and Osh.



the NOU will be the responsible focal point for screening and administering applications. Part of this function will be to provide practical assistance to applicants in preparing applications.

An end-user enterprise wishing to apply for an incentive payment will include the following key information in its application for an incentive payment (previous TPMP templates shall be applied):

- Details of HCFC-22 used during four calendar years preceding the year of application used for the service and repair of the existing equipment;
- Details of the existing equipment that is to be addressed. These should include the function of the existing equipment, make, model, serial number, year of manufacture, capacity, HCFC charge, etc.
- Technical details and costs of the proposed replacement or retrofit technology.
- Information on any changes in refrigerating capacity and energy consumption that are projected to occur as a result of the replacement or the permanent retrofit.
- Confirmation that the enterprise can meet established local safety, health, and environmental standards related to the new refrigerant.

A scale of incentive payments would be developed and will be set in correspondence with HCFC consumption levels. The incentive payments would be paid out to the participants to enable equipment replacement processes. The HCFCs received from the old equipment would be recycled/reclaimed at the recycling/reclaim centers which will further reduce dependence on import of HCFCs.

The second part of the sub-component will involve demonstrating of local capacity for equipment assembly through imported components where emphasis will be on natural refrigerants (carbon dioxide, ammonia), with installation at pilot sites and monitoring of performance in varying climatic conditions.

Approximately 1 or 2 project sites (installations) will be targeted in this work. Based on previous HPMP experience the costs of assembling one equipment on CO<sub>2</sub>/HFC double-stage technology were estimated to exceed US\$ 70,000 per installation as of 2013 market prices. After discussing these plans with one of the key equipment assemblers, it was understood that the costs have dropped since then and can be expected to be further reduced within next 2-3 years as such equipment becomes more spread in developed countries.

The project will be launched after 2017 as planned, and will take into account 1 or 2 technologies, primarily on natural refrigerants, for demonstration of feasibility of its assembly on the local market with imported components. Once installed, the equipment will have remote monitoring sensors/controls linked to it to enable data recording on its cooling capacity performance in various outside temperature regimes and energy-efficiency information to make summary performance reporting to the NOC for further dissemination to interested stakeholders in the private and public sectors.

Activities	Budget
End-user awareness and incentive component	

End-user incentive grants for non-ODS retrofits/replacement	\$75,000
Awareness workshops on the end-user component	\$5,000
National expert (part-time)	\$10,000
<b>Sub-total</b>	<b>\$90,000</b>
<b>Demonstration of alternative technologies via local assembly</b>	
Import of components and assembly of 1-2 commercial installations on natural refrigerants (required components, remote operation control, recording of operational parameters)	\$90,000
<b>Sub-total</b>	<b>\$90,000</b>
<b>Total</b>	<b>\$180,000</b>

#### 4.2.3 HPMP Stage 2 Tranche 1 Activities Break-Down by UNEP and UNDP

The following provides details on the funding request under Tranche 1 of HPMP Stage 2 for both implementing agencies, which are included in the MYA tables.

Activities	UNEP	UNDP
<b>Legal and Regulatory Actions (UNEP) – US\$ 76,000</b>		
National legislation experts for development of regulatory acts	\$30,000	
National experts for development of the of the State strategy concept for promotion of ozone-friendly refrigerants, including ammonia and carbon dioxide	\$20,000	
Stakeholders consultation meetings (5 workshops for 20-25 participants, in total 100-125 participants) - \$4,000 per workshop	\$10,000	
TA for design of ODS import licensing mandatory prior informed consent system	\$16,000	
<b>Training of Customs and enforcement officers (UNEP) – US\$ 30,000</b>		
Training of Customs and other enforcement officers (10 workshops of 2 days each for 10 officers - 100 customs and other enforcement officers) - \$4,000 per workshop	\$20,000	
TA for development of customs codes, labeling standards, handbooks in Kyrgyz/Russian languages, support in information exchange etc.	\$10,000	
<b>Strengthening the capacity in refrigeration sector (UNEP) – US\$ 36,000</b>		
National Experts for appropriate modern RAC standards (natural refrigerants) and update of existing log books	\$10,000	
National Experts for design of the mandatory certification scheme	\$10,000	
Training workshops for managers of companies on state register of ODSs and alternatives (4 workshops X 20 participants. In total, 80 participants) \$4,000 per workshop	\$16,000	
<b>Monitoring (UNEP) – US\$ 8,000</b>		
National Consultants to monitor the implementation of HPMP activities	\$8,000	
<b>Equipment/tools supply for servicing centers/individual entrepreneurs (UNDP) – US\$ 70,000</b>		
Recovery and recycling machine on oil-less compressor and 2 cylinders each, gauge manifold, electronic scales, charging station for natural refrigerants, tools - US\$ 5,000 by 11 locations		\$55,000
Reclaim machine with 3 cylinders each, advanced multi-gas analyzer, tools - US\$ 15,000 by 1 location (tool set to be procured in Tranche 2 with remaining equipment)		\$10,000
National expert for distribution and HCFC recovery reporting		\$5,000
<b>Training equipment/tools supply to training centers/vocational schools (UNDP) – US\$ 80,000</b>		
Multimedia training equipment including multimedia boards, laptops, scanners/printers (10 sets for 6 vocational schools and 4 training centers) – US\$ 4,000 each by 10 locations		\$40,000
Training R/R/R equipment and standard tools for training (charging station for natural refrigerants, welding and vacuum test stand, multi-gas analyzer (basic), reclaim machine with 3 cylinders, Lockring tools) – US\$ 7,000 each by 5 locations (total 10 locations)		\$35,000
National expert for distribution and monitoring of use		\$5,000
<b>HCFC manual distribution system (UNDP) – US\$ 20,000</b>		
HCFC charging equipment with weights, hoses, instruments, 3 large cylinders each set – US\$ 10,000 by 2 locations		\$20,000
	<b>UNEP</b>	<b>UNDP</b>
<b>Total by UNEP and UNDP for Tranche 1</b>	<b>\$ 150,000</b>	<b>\$ 170,000</b>

#### **4.2.4 Climate Change and Sound Chemicals Management Considerations**

As noted above in the presentation of the HPMP strategy framework, integration of consideration of broader global environmental issues, namely climate change, is a part of this framework. Consistent with the direction provided in Decision XIX/6 and subsequent updated ExCom guidance this particularly relates to climate change, the description of the action plan above notes where these linkages exist. The following summarizes a number of specific aspects that potentially could be incorporated into the implementation of this HPMP which link to climate change:

- Involvement of authorities responsible for climate change policy as key institutional stakeholders
- Introduction of refrigerant management regulations that would extend to HFCs

#### **4.2.5 HPMP Action Plan Timetable**

The overall timetable proposed for implementation of the HPMP is provided in Annex 1.7.

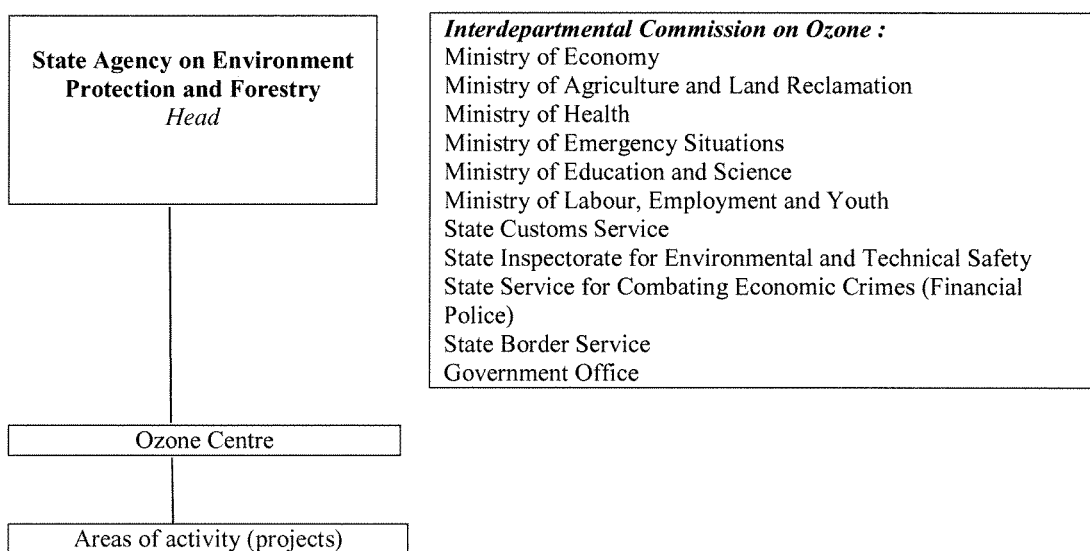
It is based on submission of the HPMP in 2015 and subsequent approval for the core non-investment funding that is understood to be contemplated for basic HPMP implementation. The committed legal and regulatory actions will be developed in 2015 and implemented starting January 1, 2016 with others being initiated based on phase out progress.

Priority technical and capacity building will be initiated in 2015/16 and continue throughout HPMP implementation. The preparatory investment activities will also begin in 2015/16 for upgraded refrigerant recovery capability.

### 4.3 Project Coordination and Management

The Kyrgyz Republic has demonstrated experience in the successful implementation of its Country Program to date. The capacity that has undertaken this within the Government, specifically the National Ozone Centre, operating under the direction of the Interdepartmental Commission on Ozone Issues will continue to act as the focal point for HPMP project coordination and management. This activity will be directly undertaken by experienced project managers acting under the direction of the Head of the NOC who also acts as the national focal point on Montreal Protocol and various international bodies involved with its implementation globally. As described above the work will be undertaken with a high level of stakeholder consultation both with various government agencies and with external stakeholders and the general public.

#### Institutional Structure

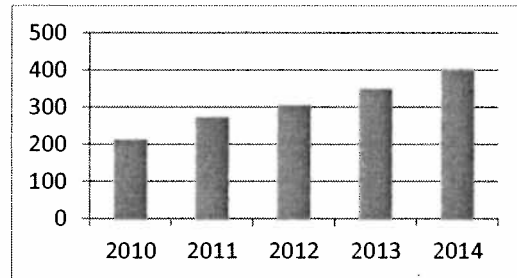


Implementation will be undertaken under the continued supervision of Interdepartmental Commission on Ozone Issues. It will involve UNDP acting as the lead implementing agency throughout the HPMP and supervising the project's investment component. UNEP will act as a supporting implementing agency for non-investment activities associated with legislation and technical capacity strengthening.

These agencies will utilize the established procedures governing procurement, financial management, reporting and monitoring of the relevant implementing agency and international funding facilities, specifically the MLF. Implementation will be further supported by various administrative and service bodies within the government, international and national consultants, suppliers of equipment and services, and beneficiary enterprises.

**Annex 1.1: Diagrams of GDP Dynamics of for Kyrgyz Republic**  
(Data in national currency provided by National Statistics Committee by 2014)

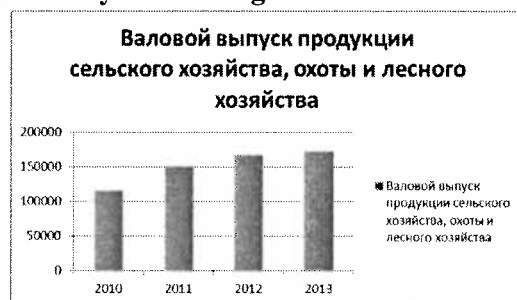
**GDP of the Kyrgyz Republic**



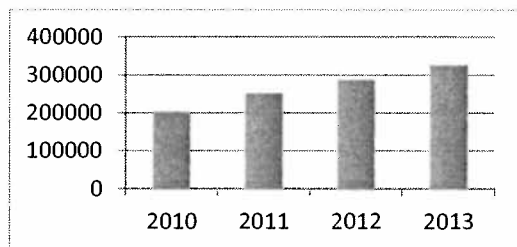
**GDP by sectors: Industry**



**GDP by sectors: Agriculture**



**GDP by sectors: Hotels and Restaurants**



**GDP by sectors: Trading**



**Annex 1.2:** Listing of Information Products, Publications, Technical Guidance Documents,  
developed during the HPMP phase 1

- Poster for customs officials «No illegal trade of ODS», 1,000 copies;
- Leaflet with quotations from Law of KR «On protection of the Ozone layer» and Code of administrative responsibility, 1,000 copies;
- Brochure «Modern refrigerators» on Russian language, 150 copies;
- Book «Handbook for refrigeration specialists» on Russian language, 150 copies;
- Poster for customs officials «No illegal trade of ODS», 1,000 copies;
- Journal «Manual for refrigerant calculation» on Russian language, 300 copies;
- Brochure «Manual of refrigeration equipment for sales managers», 200 copies;
- «Manual for customs officers on Ozone depletion substances» on Russian language, 1,000 copies;
- Brochure «Instructions for customs officers for regulation of ODS» on Russian language, 100 copies;
- Brochures «Montreal Protocol and the Customs Service», in Russian language, 250 copies;
- «Informational manual for customs officers and environmental inspectors» on Russian language, 500 copies;
- Poster «Methods of smuggling» in Russian language, 200 copies;
- Poster «Inspection of documents to prevent the smuggling of ODS» in Russian language, 200 copies;
- Poster «Inspection of goods that potentially contain ODS» in Russian language, 200 copies;
- Informational CD «Electronic controllers for refrigeration» - 100 copies;
- Brochure «Manual for repair and maintenance of refrigeration equipment», in Russian language, 100 copies;
- Stickers for refrigerating equipment, in Russian language, 300 copies;
- «Practical guide for RAC specialists», in Russian language, 300 copies;
- «The strategy of transition to alternative and ozone-friendly MDI in Kyrgyzstan», in Russian and Kyrgyz languages, 1,000 copies;
- Poster «We will win asthma together! Save the ozone layer! » in an advertising of newspaper «Showcase», 2,000 copies;
- Manual for doctors «Modern recommendations on the diagnosis and treatment of allergic rhinitis» on Russian language, 1,000 copies;
- Manual for patients, «You can control asthma» on Russian language, 1,000 copies;
- Magazine «Achievements in stratospheric ozone protection» on Russian language, 500 copies;
- Magazine «Montreal Protocol on substances that deplete the ozone layer. A success in making» on Russian language, 500 copies;
- Booklet «Twenty questions and answers about the ozone layer» on Kyrgyz and Russian language, 1,000 copies;

- Leaflet «Continuing and future challenges the ozone layer protection effort» and «Key achievements of the Montreal Protocol to date» on Kyrgyz and Russian language, 1,000 copies;
- Leaflet «Brief primer on the Montreal Protocol» on Kyrgyz and Russian language, 1,000 copies;
- Leaflet «Some ideas for stories on Montreal Protocol related matters» on Kyrgyz and Russian language, 1,000 copies;
- Postcards «The Montreal Protocol's 25th anniversary» on Russian language, 200 copies;
- Leaflet «Key achievements of the Montreal Protocol to date» on Russian language, 500 copies;
- Brochure «Stand up for the Ozone Layer and the Millennium Development Goals» on Russian language, 300 copies;
- Publication «Information Paper on synergies between the Montreal Protocol and other International Agreements» on Russian language, 200 copies;
- Poster «Potential negative effects of solar UV radiation on human health», in Russian and Kyrgyz languages, 1,000 copies;
- Poster «Line of behaviors for the sustainable development of society», in Russian and Kyrgyz languages, 1,000 copies;
- Poster «Necessary habits each day at work» in Russian and Kyrgyz languages, 500 copies;
- Brochures «Protect yourself from UV radiation», in Russian, 250 copies;
- Brochures «Stand up for the Ozone Layer and the Millennium Development Goals», in Russian, 500 copies.





**Annex 1.3: Summary of ODS Related Legislation, Resolutions, Regulations, Endorsements**

<b>Name</b>	<b>Issuing Authority/Instrument</b>	<b>Date</b>	<b>Content Summary</b>
"On immediate measures for implementation of the Vienna Convention and the Montreal Protocol"	Government Resolution # 552	06.09.2000	Approval of accession of the Montreal Protocol and London Amendment to become a Party to the Montreal Protocol.
"On the Country Program for Phase-out of ODS"	Government Resolution # 263	29.04.2002	Endorsement of the Country Program for the period 2005-2007 defining measures to be undertaken to implement commitments under the MP, facilitating the designation as an Article 5 country, establishing eligibility for MLF funding, and establishment of the NOC and Inter-departmental Commission.
"On amendments to the Resolution of Government No. 552", 25.11.2004, No. 860	Government Resolution # 860	25.11.2004	Resolution 552 approved Regulation on state control import and export of ODS and productions, Resolution 860 made amendments and additions to the Resolution 552 (separate points expired, a ban on import and export of MP Annex A ODS and equipment/products containing them.
"On protection of the Ozone Layer"	Law of the Kyrgyz Republic # 206	18.12.2006	Overall legal authority for national application of control measures respecting ODS: - State agency on environment protection and forestry, - Ministry of economic development, - State Customs Committee
"On Amendments to the Administrative Code"	Law of the Kyrgyz Republic # 64	24.04.2008	Article 181-1 assigns responsibility for non-fulfillment of measures directed to phase out environmentally harmful chemicals, particularly ODS.
"On termination of use of ODS"	Government Resolution # 374	11.07.2008	Approves amended country program for period 2006-2010 and the structure/membership of the Inter-Departmental Commission. Introduces ban effective 01.09.08 on import of methyl bromide and halons. Mandates publication of mandatory future ODS phase out dates.
"On ratifying the Regulation on state regulating import and export of ODS and ODS containing production"	Government Resolution # 594	19.09.2009	Import/export of ODS (List A, B, C, E) and ODS-containing products (List D) are subject of licensing

Name	Issuing Authority/Instrument	Date	Content Summary
“On annual import quotas of ODS”	The letter of the State agency on environment protection and forestry under the Government of Kyrgyz Republic	2009	Establishes quotas for import of CFCs and CFC containing equipment Establishes quotas on import of CFC and is directed to the Ministry of Economic Development and State Customs committee
On ban on import of CFC from the 1 <sup>st</sup> January 2010	The letter of the State agency on environment protection and forestry under the Government of Kyrgyz Republic	At the end of 2009	Bans CFC and CFC containing equipment imports after 2009 Ban on import of CFC from the 1 <sup>st</sup> January 2010.
Draft of technical regulation on pesticides	Directed to the Government for further procedures and adoption	2012	Regulation of harmful pesticides in agricultural sector including Methyl bromide
Draft of technical regulation on "Safety requirements for the operation of refrigeration equipment"	In final stage of adoption be the Government	2012	Establishes requirements for the safety of fixed compressor refrigeration units, and the processes of their life cycle, as well as minimum requirements for certification in respect of stationary refrigeration equipment, air conditioning and heat pump equipment containing ODS, as well as the conditions for mutual recognition of certificates issued in accordance with these requirements
Draft of regulation on quotas for the import of HCFCs to the Kyrgyz Republic	Directed to the Ministry of Economy for practical usage	2012	Created in order to limit the import of ODS that do not exceed the limit specified for the country. The amount of HCFC quotas issued to importers should not exceed this limit.
Amendments to the Law of the Kyrgyz Republic “On the Protection of the Ozone Layer” from 18.12.2006 No. 206	Developed by NOU Kyrgyzstan and State agency on environment protection and forestry under the Government of Kyrgyz Republic	2014	Amended by new provisions related to the prohibition of the use of all kinds of ODS-containing equipment/products from June 2015, restrictions on HCFC imports and specific rules for the movement of ODS and ODS-containing products within the territory of the Customs Union.
Amendments to the Law of the Kyrgyz Republic “On Environmental Protection” from 17.07.99 No. 53	Developed by NOU Kyrgyzstan and State agency on environment	2014	Provides the “prohibition of burial in waste disposal facilities of production and consumption, which has lost its consumer properties and containing ozone-depleting substances, without recovery of these

Name	Issuing Authority/Instrument	Date	Content Summary
	protection and forestry under the Government of Kyrgyz Republic		substances from mentioned products in order to recover them for further recycling (recycling) or destruction".
Amendments to the Law of the Kyrgyz Republic "On Air Protection" from 12.06.1999 No. 51	Developed by NOU Kyrgyzstan and State agency on environment protection and forestry under the Government of Kyrgyz Republic	2014	Amended by new Article which provides the state control over all types of refrigerants during the entire life cycle (production, import, use, reuse, recycling, recovery, reclamation and disposal)
Amendments to the Regulation on the state regulation of import and export of ozone-depleting substances and products containing them, approved by the Resolution of Government of the Kyrgyz Republic from September 19, 2009 No. 594	Developed by NOU Kyrgyzstan and State agency on environment protection and forestry under the Government of Kyrgyz Republic	2014	Amended by specific requirements on the regulation of import and export of ODS and ODS-containing products within the territory of the Customs Union. Ban the import of equipment/products containing or using all groups of ODS from 1 June 2015, and hydrochlorofluorocarbons (HCFCs) in disposable containers weighing less than 13.6 kg from 1 January 2016
Amendments to the Code of Administrative Responsibility of the Kyrgyz Republic from 04.08.1998 No. 114	Developed by NOU Kyrgyzstan and State agency on environment protection and forestry under the Government of Kyrgyz Republic	2014	Amended by a stricter administrative responsibility for emissions of harmful substances into the atmosphere without authorization, improper use, non-use of facilities, equipment or apparatus for cleaning gases and control of emissions of harmful substances into the air, which can lead to its contamination, or the use of these defective structures, equipment or apparatus entails more strict penalties.
Amendments to the Criminal Code of the Kyrgyz Republic from 01.10.1997 No. 68	Developed by NOU Kyrgyzstan and State agency on environment protection and forestry under the Government of Kyrgyz Republic	2014	Amended by tougher measures for smuggling a list of substances, including ozone-depleting substances and products containing them, up to imprisonment.
The Country Programme on phase-out of ozone-depleting substances for the period of 2015-2020 (phase 3)	Developed by NOU Kyrgyzstan and State agency on environment	2014	Provides for complete HCFC phase-out by 2020 in accordance with the Montreal Protocol on Substances that Deplete the Ozone Layer.

Name	Issuing Authority/Instrument	Date	Content Summary
	protection and forestry under the Government of Kyrgyz Republic		

**Annex 1.4: Lists of Controlled ODS and ODS Containing Products**  
**Ozone-depleting substances and products containing them, the import of which into the territory of the Customs Union and export from the territory of the Customs Union, are prohibited**

Name of product	CU CC FEA Code
Cooling mixtures	of 3824 71 000 0
	of 3824 72 000 0
	of 3824 74 000 0
	of 3824 79 000 0
Air conditioners and heat pumps	of 8415 10
	of 8415 81 00
	of 8415 82 000
	of 8418 61 00
	of 8418 69 000
Refrigerators	of 8418 10 200
	of 8418 10 800
	of 8418 50
	of 8418 69 000
Ice generators, milk coolers	of 8418
	of 8419
Freezers	8418 10 200; 8418 10 800
	8418 30 200; 8418 30 800
	8418 40 200; 8418 40 800
	of 8418 50;
	of 8418 69 000
Air dryers	of 8418 69 000;
	of 8479 89 970 1
	of 8479 89 970 8
Insulating boards, plates, panels and porous pipes coatings, using, porogens as blowing agents containing ozone-depleting substances	of 3921 11 000 0 – of 3921 19 000 0
Components and compositions based on polyethers (polyols) for the production of foamed polyurethane (component A)	of 3907 20 200 1
Portable fire extinguishers	of 3907 20 200 9
	of 8424 10 000 0



## Annex 1.5: Survey Form

### QUESTIONNAIRE

**For companies, enterprises that use ODS in manufacturing process**

**Name of company:** Address/phone/fax

**Name of manager/director:** \_\_\_\_\_

**Date of establishment:**

**Short description of production:**

**How ODS is applied/ used:**

**Parts of ownership:** (governmental - %, public - %, private - %, foreign - %)

**Markets, production is supplied to:** Kyrgyzstan - %  
Other countries - %

*Quantity and type of ODS used:*

Name of substance	2010	2011	2012	2013	2014
<b>1. Consumption of HCFC ( ) for manufacturing of new refrigeration equipment.</b> <b>Direct consumption, including:</b> <ol style="list-style-type: none"> <li>Commercial refrigeration equipment, refrigeration capacity up to 3,000 watt</li> <li>Industrial refrigeration equipment, refrigeration capacity over 3,000 watt</li> <li>Air conditioners                             <ul style="list-style-type: none"> <li>- domestic (window, split-systems);</li> <li>- commercial;</li> <li>- industrial.</li> </ul> </li> <li>Chillers</li> <li>Other</li> </ol>					
<b>2. Consumption of HCFC for planned precautionary maintenance (servicing)</b> <b>Service consumption, including:</b> <ol style="list-style-type: none"> <li>Commercial refrigeration equipment, refrigeration capacity up to 3,000 watt</li> <li>Industrial refrigeration equipment, refrigeration capacity over 3,000 watt</li> <li>Air conditioners                             <ul style="list-style-type: none"> <li>- domestic (window, split-systems);</li> <li>- commercial;</li> <li>- industrial.</li> </ul> </li> <li>Chillers</li> <li>Other</li> </ol>					
<b>3. Production of foam insulating</b> <b>Direct consumption, including:</b> <ol style="list-style-type: none"> <li>Commercial refrigeration and technological equipments</li> <li>Industrial building and assembly constructions</li> </ol>					



<b>3. Others</b>					
<b>4. Fire fighting equipment</b>					
<b>Direct consumption, including:</b>					
Filling of new fire extinguishers, fire fighting systems					
Service consumption					
Refilling of fire extinguishers, fire fighting systems					
<b>5. Solvents</b>					
<b>Direct consumption, including:</b>					
Application for cleaning of machines, systems, parts, chemical cleaning of clothes					
<b>6. Aerosols</b>					
<b>Direct consumption, including:</b>					
Filling of cylinders and vessels in the capacity of propellant					

## 2. Details:

Description of workrooms and operations

In relation to substances, indicated above, your organization is:

Importer of ODS?

User of ODS (Manufacturer and servicing sector)?

Suppliers and country of origin of substances

Predictable import / consumption till 2015

Substance	2014	2015	2016	2017	2018	2019	2020
HCFC-22							
HCFC-141b							
HCFC-142b							
other							

## 3. Management of ODS

Quantity of products, generated as waste, tons per year.

Quantity of substances, undergoing recycling, tons per year.



**Annex 1.6: Dynamics of ODS consumption in the Kyrgyz Republic from 1995 till 2013**

ODS	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
CFC-12/ODP t (1)	78.52	64.41	66.60	56.84	52.40	53.45	53.00	42.10	33.00	22.30	8.10	5.25	4.23	5.00	2.70	0.00	0.00	0.00	0.00
MB*, m.t	23.00	25.62	23.00	22.80	25.62	23.00	23.00	23.00	22.00	17.50	12.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MB*/ODP t (0,6)	13.80	15.37	13.80	13.68	15.37	13.80	13.80	13.80	13.20	10.50	7.20	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCFC-22, m.t	2.50	2.40	2.45	3.10	2.55	2.90	3.40	5.20	6.36	12.9	12.6	15.1	24.88	37.0	61.7	75.2	53.8	52.9	60.4
HCFC-22/ODP t (0,055)	0.14	0.13	0.13	0.17	0.14	0.16	0.19	0.29	0.35	0.71	0.69	0.83	1.37	2.04	3.39	4.14	2.96	2.91	3.32
HCFC-141b, m.t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.00	7.08	7.26	7.26	0.00	0.00	0.00
HCFC-141b, ODP t (0,11)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.22	0.78	0.78	0.78	0.00	0.00	0.00
HCFC-142b, m.t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.5	3.0	3.0	0.00	0.00	10.3
HCFC-142b/ODP t (0,065)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.195	0.195	0.00	0.00	0.67
Halon-1211, m.t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halon-1211/ODP t (3,0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halon-2402, m.t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halon-2402/ODP t (6,0)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

\* Consumption of MB is given without consumption on quarantine and processing before shipment





## **Annex 1.8**

### **DRAFT AGREEMENT BETWEEN KYRGYZSTAN AND THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND FOR THE REDUCTION IN CONSUMPTION OF HYDROCHLOROFLUOROCARBONS**

1. This Agreement represents the understanding of the Government of Kyrgyzstan (the “Country”) and the Executive Committee with respect to the reduction of controlled use of the ozone depleting substances (ODS) set out in Appendix 1-A (“The Substances”) to a sustained 0.102 ODP tonnes to 1 January 2020 in compliance with Montreal Protocol accelerated schedules.
2. The Country agrees to meet the annual consumption limits of the Substances as set out in row 1.2 of Appendix 2-A (“The Targets and Funding”) in this Agreement as well as in the Montreal Protocol reduction schedule for all Substances mentioned in Appendix 1-A. The Country accepts that, by its acceptance of this Agreement and performance by the Executive Committee of its funding obligations described in paragraph 3, it is precluded from applying for or receiving further funding from the Multilateral Fund in respect to any consumption of the Substances which exceeds the level defined in row 1.2 of Appendix 2-A (maximum allowable total consumption of Annex C, Group I substances) as the final reduction step under this agreement for all of the Substances specified in Appendix 1-A, and in respect to any consumption of each of the Substances which exceeds the level defined in rows 4.1.3 and 4.2.3 (remaining eligible consumption).
3. Subject to compliance by the Country with its obligations set out in this Agreement, the Executive Committee agrees in principle to provide the funding set out in row 3.1 of Appendix 2-A (the “Targets and Funding”) to the Country. The Executive Committee will, in principle, provide this funding at the Executive Committee meetings specified in Appendix 3-A (the “Funding Approval Schedule”).
4. The Country will meet the consumption limits for each of the Substances as indicated in Appendix 2-A. It will also accept independent verification, to be commissioned by the relevant bilateral or implementing agency, of achievement of these consumption limits as described in sub-paragraph 5(b) of this Agreement.
5. The Executive Committee will not provide the Funding in accordance with the Funding Approval Schedule unless the Country satisfies the following conditions at least 60 days prior to the applicable Executive Committee meeting set out in the Funding Approval Schedule:
  - a. That the Country has met the Targets for all relevant years. Relevant years are all years since the year in which the hydrochlorofluorocarbons phase-out management plan (HPMP) was approved. Exempt are years for which no obligation for reporting of country programme data exists at the date of the Executive Committee Meeting at which the funding request is being presented;
  - b. That the meeting of these Targets has been independently verified, except if the Executive Committee decided that such verification would not be required;
  - c. That the Country had submitted tranche implementation reports in the form of

Appendix 4-A (the “Format of Tranche Implementation Report and Plan”) covering each previous calendar year, that it had achieved a significant level of implementation of activities initiated with previously approved tranches, and that the rate of disbursement of funding available from the previously approved tranche was more than 20 per cent; and

- d. That the Country has submitted and received approval from the Executive Committee for a tranche implementation plan in the form of Appendix 4-A (the “Format of Tranche Implementation Reports and Plans”) covering each calendar year until and including the year for which the funding schedule foresees the submission of the next tranche or, in case of the final tranche, until completion of all activities foreseen.
6. The Country will ensure that it conducts accurate monitoring of its activities under this Agreement. The institutions set out in Appendix 5-A (the “Monitoring Institutions and Roles”) will monitor and report on Implementation of the activities in the previous tranche implementation plan in accordance with their roles and responsibilities set out in Appendix 5-A. This monitoring will also be subject to independent verification as described in sub-paragraph 5(b).
7. The Executive Committee agrees that the Country may have the flexibility to reallocate the approved funds, or part of the funds, according to the evolving circumstances to achieve the smoothest phase-down and phase-out of the Substances specified in Appendix 1-A. Reallocations categorized as major changes must be documented in advance in a Tranche Implementation Plan and approved by the Executive Committee as described in sub-paragraph 5(d). Major changes would relate to reallocations affecting in total 30 per cent or more of the funding of the last approved tranche, issues potentially concerning the rules and policies of the Multilateral Fund, or changes which would modify any clause of this Agreement. Reallocations not categorized as major changes may be incorporated in the approved Tranche Implementation Plan, under implementation at the time, and reported to the Executive Committee in the Tranche Implementation Report. Any remaining funds will be returned to the Multilateral Fund upon closure of the last tranche of the plan.
8. Specific attention will be paid to the execution of the activities in the refrigeration servicing sub-sector, in particular:
  - a. The Country would use the flexibility available under this Agreement to address specific needs that might arise during project implementation; and
  - b. The Country and the bilateral and implementing agencies involved will take full account of the requirements of decisions 41/100 and 49/6 during the implementation of the plan.
9. The Country agrees to assume overall responsibility for the management and implementation of this Agreement and of all activities undertaken by it or on its behalf to fulfil the obligations under this Agreement. UNDP has agreed to be the lead implementing agency (the “Lead IA”) and UNEP has agreed to be cooperating implementing agency (the “Cooperating IA”) under the lead of the Lead IA in respect of the Country’s activities under this Agreement. The Country agrees to evaluations, which might be carried out under the monitoring and evaluation work programmes of the Multilateral Fund or under the evaluation programme of any of the IA taking part in this Agreement.

10. The Lead IA will be responsible for carrying out the activities of the plan as detailed in the first submission of the HPMP with the changes approved as part of the subsequent tranche submissions, including but not limited to independent verification as per sub-paragraph 5(b). The Executive Committee agrees, in principle, to provide the Lead IA and the Cooperating IA with the fees set out in rows 2.2 and 2.4 of Appendix 2-A.
11. Should the Country, for any reason, not meet the Targets for the elimination of the Substances set out in row 1.2 of Appendix 2-A or otherwise does not comply with this Agreement, then the Country agrees that it will not be entitled to the Funding in accordance with the Funding Approval Schedule. At the discretion of the Executive Committee, funding will be reinstated according to a revised Funding Approval Schedule determined by the Executive Committee after the Country has demonstrated that it has satisfied all of its obligations that were due to be met prior to receipt of the next tranche of funding under the Funding Approval Schedule. The Country acknowledges that the Executive Committee may reduce the amount of the Funding by the amounts set out in Appendix 7-A in respect of each ODP tonne of reductions in consumption not achieved in any one year. The Executive Committee will discuss each specific case in which the country did not comply with this Agreement, and take related decisions. Once these decisions are taken, this specific case will not be an impediment for future tranches as per paragraph 5.
12. The Funding of this Agreement will not be modified on the basis of any future Executive Committee decision that may affect the funding of any other consumption sector projects or any other related activities in the Country.
13. The Country will comply with any reasonable request of the Executive Committee, the Lead IA and the Cooperating IA to facilitate implementation of this Agreement. In particular, it will provide the Lead IA and the Cooperating IA with access to information necessary to verify compliance with this Agreement.
14. The completion of the HPMP and the associated Agreement will take place at the end of the year following the last year for which a maximum allowable total consumption has been specified in Appendix 2-A. Should at that time activities be still outstanding which were foreseen in the Plan and its subsequent revisions as per sub-paragraph 5(d) and paragraph 7, the completion will be delayed until the end of the year following the implementation of the remaining activities. The reporting requirements as per Appendix 4-A (a), (b), (d) and (e) continue until the time of the completion if not specified by the Executive Committee otherwise.
15. All of the agreements set out in this Agreement are undertaken solely within the context of the Montreal Protocol and as specified in this Agreement. All terms used in this Agreement have the meaning ascribed to them in the Montreal Protocol unless otherwise defined herein.





## APPENDICES

### APPENDIX 1-A: THE SUBSTANCES

Substance	Annex	Group	Starting point for aggregate reductions in consumption (ODP tonnes)
HCFC-22	C	I	4.1

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

Row	Particulars	2015	2016	2017	2018	2019	2020*	Total
1.1	Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	3.69	3.35	3.01	2.66	2.32	1.99	n/a
1.2	Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	3.69	2.67	2.05	1.32	0.41	0.102	n/a
2.1	Lead IA UNDP agreed funding (US \$)	170,000			175,000		55,000	400,000
2.2	Support costs for Lead IA(US \$) 9%	15,300			15,750		4,950	36,000
2.3	Cooperating IA UNEP agreed funding (US \$)	150,000			155,800		6,200	312,000
2.4	Support costs for Cooperating IA(US \$) 13%	19,500			20,254		806	40,560
3.1	Total agreed funding (US \$)	320,000			330,800		61,200	712,000
3.2	Total support cost (US \$)	34,800			36,004		5,756	76,560
3.3	Total agreed costs (US \$)	354,800			366,804		66,956	788,560
4.1.1	Total phase-out of HCFC-22 agreed to be achieved under this agreement (ODP tonnes)							3.69
4.1.2	Phase-out of HCFC-22 to be achieved in previously approved projects (ODP tonnes)							0.41
4.1.3	Remaining eligible consumption for HCFC-22 (ODP tonnes)							3.69
4.2.1	Total phase-out of HCFC-141b agreed to be achieved under this agreement (ODP tonnes)							0
4.2.2	Phase-out of HCFC-141b to be achieved in previously approved projects (ODP tonnes)							0
4.2.3	Remaining eligible consumption for HCFC-141b (ODP tonnes)							0

\*Remaining for service tail up to 2030 (0.102 ODP tones per year).



### **APPENDIX 3-A: FUNDING APPROVAL SCHEDULE**

1. Funding for the future tranches will be considered for approval not earlier than the last meeting of the year specified in Appendix 2-A.

### **APPENDIX 4-A: FORMAT OF TRANCHE IMPLEMENTATION REPORTS AND PLANS**

1. The submission of the Tranche Implementation Report and Plan will consist of five parts:
  - a. A narrative report regarding the progress in the previous tranche, reflecting on the situation of the Country in regard to phase out of the Substances, how the different activities contribute to it and how they relate to each other. The report should further highlight successes, experiences and challenges related to the different activities included in the Plan, reflecting on changes in the circumstances in the country, and providing other relevant information. The report should also include information about and justification for any changes vis-à-vis the previously submitted tranche plan, such as delays, uses of the flexibility for reallocation of funds during implementation of a tranche, as provided for in paragraph 7 of this Agreement, or other changes. The narrative report will cover all relevant years specified in sub-paragraph 5(a) of the Agreement and can in addition also include information about activities in the current year;
  - b. A verification report of the HPMP results and the consumption of the substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement. If not decided otherwise by the Executive Committee, such a verification has to be provided together with each tranche request and will have to provide verification of the consumption for all relevant years as specified in sub-paragraph 5(a) of the Agreement for which a verification report has not yet been acknowledged by the Committee;
  - c. A written description of the activities to be undertaken in the next tranche, highlighting their interdependence, and taking into account experiences made and progress achieved in the implementation of earlier tranches. The description should also include a reference to the overall Plan and progress achieved, as well as any possible changes to the overall plan foreseen. The description should cover the years specified in sub-paragraph 5(d) of the Agreement. The description should also specify and explain any revisions to the overall plan which were found to be necessary;
  - d. A set of quantitative information for the report and plan, submitted into a database. As per the relevant decisions of the Executive Committee in respect to the format required, the data should be submitted online. This quantitative information, to be submitted by calendar year with each tranche request, will be amending the narratives and description for the report (see sub-paragraph 1(a) above) and the plan (see sub-paragraph 1(c) above), and will cover the same time periods and activities; it will also capture the quantitative information regarding any necessary revisions of the overall plan as per sub-paragraph 1(c) above. While the quantitative information is required only for previous and future years, the format will include the option to submit in addition information regarding the current year if desired by the country and lead implementing agency; and
  - e. An Executive Summary of about five paragraphs, summarizing the information of

above sub-paragraphs 1(a) to 1(d).

## **APPENDIX 5-A: MONITORING INSTITUTIONS AND ROLES**

1. Appendix 5-A, Monitoring Institutions and Roles, may vary from agreement to agreement. Previous agreements entered by the Committee as reflected in the Reports of the Meetings as well as the existing agreements for the TPMP should be referenced to provide relevant examples. The principle need is for the appendix to provide a detailed and credible indication of how progress is to be monitored and which organizations will be responsible for the activities. Please take into account any experiences from implementing the TPMP, and introduce the relevant changes and improvements.

The Kyrgyz Republic has demonstrated experience in the successful implementation of its Country Programme to date. The capacity that has undertaken this within the Government, specifically the National Ozone Centre (NOC), operating under the direction of the Interdepartmental Commission on Ozone Issues will continue to act as the focal point for HPMP project coordination and management. This activity will be directly undertaken by experienced project managers acting under the direction of the Head of the NOC who also acts as the national focal point on Montreal Protocol and various international bodies involved with its implementation globally. The work will be undertaken with a high level of stakeholder consultation both with various government agencies and with external stakeholders and the general public.

Implementation will be undertaken under the continued supervision of Interdepartmental Commission on Ozone Issues. It will involve UNDP acting as the lead implementing agency throughout the HPMP and supervising the project's investment component. UNEP will act as a supporting implementing agency for non-investment activities associated with legislation and technical capacity strengthening. These agencies will utilize the established procedures governing procurement, financial management, reporting and monitoring of the relevant implementing agency and international funding facilities, specifically the MLF. Implementation will be further supported by various administrative and service bodies within the government, international and national consultants, suppliers of equipment and services, and beneficiary enterprises.

## **APPENDIX 6-A: ROLE OF THE LEAD IMPLEMENTING AGENCY**

1. The Lead IA will be responsible for a range of activities. These can be specified in the project document further, but include at least the following:
  - a. Ensuring performance and financial verification in accordance with this Agreement and with its specific internal procedures and requirements as set out in the Country's phase-out plan;
  - b. Assisting the Country in preparation of the Tranche Implementation Plans and subsequent reports as per Appendix 4-A;

- c. Providing verification to the Executive Committee that the Targets have been met and associated annual activities have been completed as indicated in the Tranche Implementation Plan consistent with Appendix 4-A;
  - d. Ensuring that the experiences and progress is reflected in updates of the overall Plan and in future Tranche Implementation Plans consistent with sub-paragraphs 1(c) and 1(d) of Appendix 4-A;
  - e. Fulfilling the reporting requirements for the tranches and the overall Plan as specified in Appendix 4-A as well as project completion reports for submission to the Executive Committee. The reporting requirements include the reporting about activities undertaken by the Cooperating IA;
  - f. Ensuring that appropriate independent technical experts carry out the technical reviews;
  - g. Carrying out required supervision missions;
  - h. Ensuring the presence of an operating mechanism to allow effective, transparent implementation of the Tranche Implementation Plan and accurate data reporting;
  - i. Co-ordinating the activities of the Cooperating IA, and ensuring appropriate sequence of activities;
  - j. In case of reductions in funding for failure to comply in accordance with paragraph 11 of the Agreement, to determine, in consultation with the Country and the co-ordinating implementing agencies, the allocation of the reductions to the different budget items and to the funding of each implementing or bilateral agency involved;
  - k. Ensuring that disbursements made to the Country are based on the use of the indicators; and
  - l. Providing assistance with policy, management and technical support when required.
2. After consultation with the Country and taking into account any views expressed, the Lead IA will select and mandate an independent organization to carry out the verification of the HPMP results and the consumption of the substances mentioned in Appendix 1-A, as per sub-paragraph 5(b) of the Agreement and sub-paragraph 1(b) of Appendix 4-A.

#### **APPENDIX 6-B: ROLE OF COOPERATING IMPLEMENTING AGENCY**

1. The Cooperating IA will be responsible for a range of activities. These activities can be specified in the respective project document further, but include at least the following:
  - a. Providing policy development assistance when required;
  - b. Assisting the Country in the implementation and assessment of the activities funded by the Cooperating IA, and refer to the Lead IA to ensure a co-ordinated sequence in the activities; and
  - c. Providing reports to the Lead IA on these activities, for inclusion in the consolidated reports as per Appendix 4-A.

#### **APPENDIX 7-A: REDUCTIONS IN FUNDING FOR FAILURE TO COMPLY**

1. In accordance with paragraph 11 of the Agreement, the amount of funding provided may be reduced by US \$ 5,000 per ODP tonne of consumption beyond the level defined in row 1.2 of Appendix 2-A for each year in which the target specified in row 1.2 of Appendix 2-A has not been met.

#### **APPENDIX 8-A: SECTOR SPECIFIC ARRANGEMENTS**

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