HCFC PHASE-OUT MANAGEMENT PLAN – HPMP

2015-2016 PROGRESS REPORT (3º Tranche) & 2017-2019 ACTION PLAN (4º Tranche)

Prepared by

MINISTRY OF ENVIRONMENT AND ENERGY

COSTA RICA

With assistance of

UNITED NATIONS DEVELOPMENT PROGRAMME - UNDP

August, 2017

PROJECT COVER SHEET: TRANCHE REQUEST

COUNTRY NAME	**Costa Rica**
LEAD IMPLEMENTING AGENCY	**UNDP**
COOPERATING IMPLEMENTING AGENCY	

SUBMISSION OF COMPLETE DOCUMENTATION		
Document	**Yes/No**	**Comments**
Progress report for previous tranche	Yes	
Financial report	Yes	
Verification report (where applicable)	NA	
Plan of action	Yes	
MYA tables (on-line)	Yes	
Revised Agreement (where applicable)	Yes	The agreement for Costa Rica needs to be revised because an error was made in the approved version. The Baseline will remain the same but the starting point will be different. UNDP would like to discuss with the MLFS how this information can be presented to the ExCom.

DATES OF RATIFICATION OF AMENDMENTS TO THE PROTOCOL			
Copenhagen	August 6, 1998, Law 7808	**Beijing**	October 9, 2008, Law 8670
Comments:			

HCFC REGULATIONS IN PLACE		
Regulation	**Yes/No**	**Comments**
HCFC licensing system	Yes	Executive Decree No. 35676 SH-MAG-MINAET Regulation Act No. 7223 (adoption of the Montreal Protocol. Concerning Substances that Deplete the Ozone Layer, signed on September 16, 1987) and its amendments.
HCFC quota system	Yes	Executive Decree No. 37614-MINAET Regulation to implement a mechanism IMPORTING fees for phasing out the use of HCFCs listed in Group I of Annex C of the Montreal Protocol.

SUBMISSION OF ODS DATA REPORTS			
Report	**Yes/No**	**Year of data**	**Comments**
Country programme	Yes	2012	
Article 7 data (latest report)	Yes	2016	
ODS data for year of tranche	Yes	2016	
Explain any data discrepancies:			

HPMP DOCUMENT					
Phase-out commitment (%)	Freeze, 10%, 35%	**Year of commitment**	2013, 2015, 2020		
Servicing only		**Manufacturing only**		**Servicing/manufacturing**	X

PROJECT COVER SHEET

I. PROGRESS REPORT (maximum 10 pages)

I.1 Background

The HCFC Phase Out Management Plan (HPMP) for Costa Rica, which includes the elimination of HCFC polyurethane foams for the manufacture of domestic refrigerators in Costa Rica, was approved at the 64th meeting of the Executive Committee of the Multilateral Fund, in Montreal in July 2011. For the implementation of this Plan the country pledged to start controlling the consumption of HCFCs with the freezing of its imports starting in 2013, with reference to the baseline reported for the period 2009-2010 (14.1). The first reduction of 10% over the baseline level will be held in 2015 and the second from 35% in 2020. The total amount approved for the implementation of the project was U.S. $ 1,240,037 (U.S. $ $ 1,153,523 for project costs and U.S. $ 86.514 for support costs). For the project "Elimination of HCFC polyurethane foam for the manufacture of domestic refrigerators" the country's commitment was to eliminate the use of HCFC-141b as a blowing agent for good in the Domestic Refrigeration Sector. Additional projects in the foam sector will be presented in the future according to decisions 61/47 and 63/15.

The United Nations Development Program is the implementing agency of the Management Plan for the Elimination of HCFCs in Costa Rica.

I.2 ODS policy/legislative/regulatory and institutional framework

I.2.1 Status of ratification of amendments to the Montreal

Costa Rica has ratified the Montreal Protocol and all its amendments by the following summary:

- Ratified the Montreal Protocol in 1991 (Costa Rica 7223 Act)
- London Amendment in 1998 (Costa Rica 7808 Act)
- Copenhagen Amendment in 1998 (Costa Rica 7808 Act)
- Amendment of Montreal in 2005 (Costa Rica 8443 Act)
- Beijing Amendment in 2008 (Costa Rica 8670 Act)

I.2.2 ODS legislation/regulations

Environment care is one of Costa Rica’s political pillars, so the country has established a complete legal framework aimed to protect the environment, counting with some norms and regulation to protect specifically the ozone layer.

1. Constitution of the Republic of Costa Rica: Articles 50, 140 clauses 3) and 18) and 146
2. Law No. 6227 of May 2, 1978, "General Law of Public Administration": Article 25 paragraph 1), 27 paragraph 1) and 28 paragraph 2).

3. Law No. 7554 of October 4, 1995, "Environmental Law": Items 1, 2, 3, 4, 5, 49, 59, 60 d), 62, 63 These and related.
4. Law No. 7228 of May 6, 1991, "Approval of Costa Rica's accession to the Vienna Convention for the Protection of the Ozone Layer".
5. Law No. 7223 of April 8, 1991, "Approval of the Montreal Protocol on Substances that Deplete the Ozone Layer".
6. Law No. 7808 of June 11, 1998 "Approval of Amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer and its annexes adopted in the Second and Fourth Meeting of the Parties in London and Copenhagen, 1998".
7. Law No. 8443 of May 3, 2005, "Approval of the amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer and its annexes, 1997".
8. Act 8670 of October 9, 2008 "Approval of the amendment to the Montreal Protocol on Substances that Deplete the Ozone Layer (1999).
9. Act "Adoption of the Kyoto Protocol of the UN Framework Convention on Climate Change": Article 1.
10. Law No. 8219 of March 8, 2002: Articles 1, 2, 3, 4, 38 and 39 of Executive Decree No. 35669 of December 4, 2009.
11. "Organic Regulations of the Ministry of Environment, Energy and Telecommunications "and his reforms.
12. 12. Executive Decree No. 35676-SH-MAG-MINAET of August 6, 2009 "Regulations for the control of substances that deplete the ozone layer according to law 7223, as amended": Sections 4, 6, 11, 12, following and related.
13. Executive Order 37614-MINAET "Regulations to implement an import quota mechanism for phasing out the use of HCFCs listed in Group I of Annex C of the Montreal Protocol"

Since 2010, Costa Rica applies a licensing system for the import of HCFC and HFC covered in regulation 35676 S-H-MAG-MINAET. This system is implemented by the National Ozone Unit (NOU), Bureau of Environmental Quality Management and Energy Ministry of Environment (MINAE), in coordination with the Directorate General of Customs, Ministry of Finance and Trade Office the Ministry of Foreign Trade.

I.3 HCFC consumption and production

Costa Rica does not produce HCFCs. In this sense, the national consumption is based on imports and exports. Table 1 demonstrates the official data reported. As mentioned before, a quota system is in place since January 1st 2013.

Table 1. HCFC consumption level in Costa Rica

HCF ODP tons	2009	2010	2011	2012	2013	2014	2015	2016
HCFC-22	10.60	9.45	18.62	16.98	9.80	9.80	8.56	8.55
HCFC-141b *	3.11	4.06	3.13	5.35	2.58	2.55	2.19	2.23
HCFC-142b	0.34	0.46	0.00	0.61	0.16	0.16	0.14	0.10
HCFC-124	0.13	0.04	0.00	0.05	0.02	0.02	0.01	0.01
HCFC-123	0.01	0.00	0.00	0.01	0.06	0.06	0.05	0.00
HCFC-225ca	0.00	0.00	0.00	0.00	0.00	0.02	0.05	0.00
HCFC-225cd	0.00	0.00	0.00	0.00	0.00	0.03	0.07	0.00
Subtotal	**14.20**	**14.01**	**21.75**	**22.99**	**12.60**	**12.64**	**11.08**	**10.89**

(*) Only use as cleaning agent.

Table 1 show the volume of imports of HCFCs for the years 2011 to 2016 compared to the baseline (2009-2010), this behavior was expected, because the HCFC importers were aware of the implementation of the import quota system in 2013. With the implementation of the regulation of import quotas for HCFC consumption of these substances were reduce in 2013 to the maximum permitted levels. Quotas were allocated to importers in the month of November 2012. The total import of HCFCs by 2013 in Costa Rica may not exceed 14.1 ODP tonnes (Baseline), as set out in national legislation.

I.4 HCFC phase-out activities

I.4.1 Phase-out activities in the refrigeration servicing sector

Actions 2015

- Fiscal Police Training Programs.
  - 3 sessions executed.
  - 75 trained officers.
- Formation of the Interuniversity Commission with Engineering Schools of the University of Costa Rica (UCR) and the Technological Institute of Costa Rica (TEC).
  - Establishment of work plan with the objective of:
    - Determine contents and needs related to natural technologies in RAC systems, which must be incorporated into the curricula of the different engineering branches.
    - Determine needs for laboratory and equipment practices related to natural technologies in RAC systems.
    - Determine the training needs of the trainers of each of the engineering specialties in the area of new RAC technologies.
    - Determine which processes are necessary for the formalization of proposals and improvements to the training plans of the country's engineering schools related to new technologies in RAC systems and natural refrigerants.
- Technical Training for RAC technicians and engineers of the Costa Rican Institute of Electricity (ICE) in refrigerant management.
  - 2 training sessions carried out.

  - 60 technicians and professionals trained.
- Training unit of Fire Engineering of Costa Rica Firefighters Unit.
  - San Jose city, 14 professionals trained.
- Participation in Conbrava-Febrava Brasil 2015.
  - Provided knowledge of new RAC Technologies.
  - Make contact with specialists and professionals in RAC systems.
- Investigation status of authorized companies by the Ministry of Health for the management of refrigerant gases and RAC equipment in order to:
  - Evaluate interest in belonging to the refrigerant gas recovery network for destruction.
  - Assess need for equipment to participate in a project to destroy refrigerant gas in Costa Rica.
- Incorporation of international experts in the formulation of the curricula and technical needs for the National Institute of Learning (INA).
  - Signing of a Cooperation Agreement between SENAI-UNDP
  - Participation of 3 SENAI specialists in the curricular design of the Industrial Refrigeration with Ammonia specialty for the INA.
  - Training Program for INA instructors by SENAI expert.
  - A 40-hour session.
  - 15 trained INA instructors.
- South-South cooperation for the training instructors of the National Service of Learning (SENA) of Colombia by INA Costa Rica.
  - Internship for the training of SENA instructors at the INA, in the specialty of ammonia refrigeration.
    - A 40-hour session.
    - 5 trained SENA instructors.
- Survey of Costa Rican refrigeration technicians.
  - Request for information.
  - Receiving information, 200 applications.
  - Register in database.

2016 Actions

- To contact, reactivate and train basic RAC technical groups from different regions of the country in updating HPMP activities and future regulations.
  - Liberia, 30 participants
  - San Carlos, 60 participants.
  - Puntarenas, 50 participants.
- Promote the process of association of refrigeration technicians.
  - Meetings in Liberia, San Carlos, Puntarenas.
  - Puntarenas and San Carlos with concrete actions in the constitution of the association.
- Promotion, jointly with INA, of three new modalities of execution of courses of "Good Practices of Service and Refrigerants Management"
  - Traditional mode for non-formal technicians of 50 hours.
  - Modality for formal technicians of 25 hours.
  - Certification of competences modality.
- Consolidation of the process of execution of identification card of technician registered in MINAE
  - Receiving requirements.

  - Register in database.
  - Total number of licenses issued to 1223 RAC technicians.
- Support to Costa Rica Industries Chamber in the process of training RAC technicians form partners companies in "Refrigeration and Efficient Air Conditioning".
  - A 5-hour session.
  - 18 trained professionals
- Strengthening of the unwanted ODS recovery network.
  - Design of a collection network and its stakeholders.
  - Purchase of equipment for storage and recovery of refrigerant gases for destruction.
  - Agreement with Customs Laboratory for analysis of gases for destruction.
  - Agreement between Holcim -MINAE for the start-up of the destruction process.
  - Acquisition of materials for a new injection station in Holcim.
- Demonstration pilot project proposal with PINOVA (NH3/CO2)
  - Proposal development.
  - Submit proposal to EXCOM
  - Agreement between MINAE-PINOVA

I.4.2 Phase-out activities in the manufacturing sector

In June 2013, it was successfully concluded the conversion project of the national manufacturing company of household refrigerators, Atlas Industrial SA, all its foaming lines adopted the use of Cyclopentane as blowing agent in its polyurethane foam. The conversion project was able to conclude in adherence to the timetable for implementation proposed.

From the conclusion of this project, the manufacture of household refrigerators in the country has eliminated the consumption of HCFC-141b and also will reduce the emission of greenhouse gases during the manufacturing process of the thermal insulation cabinets refrigerators, making an important contribution to the process of "carbon neutrality by 2021".

Table 2. Summary of activities 2015-2016.

Project	Activities/Achievements
FOAM SECTOR	
Industrial reconversion to eliminate the use of HCFC-141b in polyols blends for rigid foam production.	No activities were made in this field.
Total foam sector	
REFRIGERATION SECTOR	
Build capacity of service technicians and professionals	7 workshops for the individual technicians, institutional technicians and professionals in engineering field.
	Incorporation of international experts to design an Industrial Refrigeration specialty with Ammonia Refrigerant for INA.
	3 workshops to promote the association and certification process for RAC technicians.
	Carry out 2 train-the-trainer courses for SENA and INA instructors, in Industrial Refrigeration Systems with Ammonia Refrigerant.
Establish mechanisms that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency seal.	3 workshops for ICE technicians and professionals to select new RAC systems with less environmental impact and best energy efficiency as possible.
	Project Pilot proposal with use NH3/CO2 in two stages in Manufacture Industry.
Update the import and export control systems for reliable and easy to access for authorized users	No actions require in this filed.
Strengthen capacity of HCFC recovery and use	Purchase and distribution of R&R equipment and recovery cylinders within the existing national R&R system.
	Technical assistance and orientation for HCFC end-users on the proper recovery and storage, by a first step before the correct disposal.
	Promotion and strengthening of the national R&R network.
Establish a mechanism for storage of unwanted ODS including HCFCs	Agreements with stake holders and industrial sectors for destruction of ODS in cement kiln.
Programme management and monitoring	Hiring of consultants for technical and managerial assistance to HPMP activities. Technical and managerial assistance to project activities.

I.4.5 Project management unit

The HPMP, which includes the elimination of HCFC in polyurethane foams for the manufacture of domestic refrigerators in Costa Rica, is run by the NOU, with the support of an interagency Commission which also involved the DSE and the Department MINAE Climate Change, the

Directorate General of Customs, Ministry of Finance, the Chamber of Industries of Costa Rica, the INA's Electrical Core Sector Cooling Area, GIZ, UNDP, the University of Costa Rica (UCR) and the Technological Institute of Costa Rica (ITCR).

The Commission discussed the prioritization of activities related for the implementation of the project. The participation of different actors has allowed the establishment a work schedule with the allocation of tasks and responsibilities.

Also the General Customs Directorate worked together with OTO on HCFC Control measures and legal framework.

I.5 Financial report

Table 3. Total tranches expenditures (2013-2016) in US$.

Component	Total US$	I Tranche US$	Expenditures US$	Tranche I Balance US$	II Tranche US$	Expenditures US$	Tranche II Balance US$	III Tranche US$	Expenditures US$	Tranche III Balance US$	Tranche I, II & III Total Expenditures US$	Tranche I, II & III Total Balance US$	Tranche I, II & III Execution %	Total Project Balance $USD
REFRIGERATION SECTOR														
Build capacity of service technicians and professionals	$ 48,000	$ 43,000	$ 6,000	$ 37,000	$ 18,000	$ 16,335	$ 1,665	$ -	$ 23,055	$ (23,055)	$ 45,390	$ 15,610	74.4%	$ (13,000)
Establish a mechanisms that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency seal	$ 60,000	$ 10,000	$ 2,000	$ 8,000	$ 30,000	$ 37,126	$ (7,126)	$ 5,000	$ 1,124	$ 3,876	$ 40,250	$ 4,750	86.9%	$ 15,000
Update the import and export control systems for reliable and easy to access for authorized users.	$ 80,000	$ 29,000	$ 2,317	$ 26,683	$ 20,000	$ 44,103	$ (24,103)	$ 4,000	$ 1,998	$ 2,002	$ 48,417	$ 4,583	94.7%	$ 27,000
Strengthen capacity of HCFC recovery and use.	$ 105,000	$ 25,000	$ 3,847	$ 21,153	$ 50,000	$ 20,016	$ 29,984	$ 5,000	$ 31,990	$ (26,990)	$ 55,853	$ 24,147	31.8%	$ 25,000
Establish a mechanism for storage of unwanted ODS including HCFCs.	$ 155,000	$ 37,575	$ 2,000	$ 35,575	$ 10,000	$ 13,590	$ (3,590)	$ 24,000	$ 35,078	$ (11,078)	$ 50,669	$ 20,906	32.8%	$ 83,425
Programme management and monitoring	$ 112,000	$ 23,425	$ 5,000	$ 18,425	$ 40,000	$ 55,822	$ (15,822)	$ 24,000	$ 41,833	$ (17,833)	$ 102,655	$ (15,230)	95.9%	$ 24,575
Refrigeration Sector Total	$ 560,000	$ 168,000	$ 21,164	$ 146,836	$ 168,000	$ 186,992	$ (18,992)	$ 62,000	$ 135,078	$ (73,078)	$ 343,234	$ 54,766	62.0%	$ 162,000
TOTAL TRANCHE		$ 168,000			$ 168,000			$ 62,000						

Table 5. Total Project Balance in US$.

Total Project budget (5 tranches)	$ 560,000.00	Dec 2016
Total Tranches recibed (3)	$ 398,000.00	
Total Project Expenditures	$ 343,234.27	
Balance	$ 54,766.00	
Total Ejecution 3th tranche	86%	
Total Project Ejecution	62%	

II. PLAN OF ACTION

Table 7. Plan of action fourth tranche.

Agency	Project	Remaining activities from Tranche 3	Balance 2016 to be transferred to 2017 - 2018 (US$)	Activities for 2017-2018 (Tranche 4)	Requested funds (US$)	Total Budget 2017 - 2018
REFRIGERATION SERVICING SECTOR						
UNDP	Build capacity of service technicians and professionals	Continue promote the association of certified technicians in refrigeration and air conditioning, including ammonia. Continue with design of the structure for the implementation of a certification procedure for RAC technicians.	$ 15,610	Strengthen engineering schools in the use of natural refrigerants. Identify financial options to support equipment of RAC technicians. 2 workshops to transfer successful experiences of RAC technical associations operating in the region. 2 trainings sessions for university professors in the use of natural technologies (CO_2, HC, NH_3). Proposal for a new model of RAC technician's certification system.	$ 4,000	$ 19,610

UNDP	Establish a mechanism that facilitate users' selection of efficient equipment, incentives system that promotes the commercialization of equipment with the eco-efficiency	Continue with promoting and implementing voluntaries agreements with key sectors to foment the use of eco efficient equipment and refrigerants.	$ 4,750	To promote actions for the adoption of cold districts in institutions and companies with potential to realize the conceptual change. Identify other options for possible pilot projects with natural refrigerants. 3 technology outreach workshops to reduce the use of chemical refrigerants and low energy efficiency RAC systems.	$ 4,000	$ 8,750
UNDP	Update the import and export control systems for reliable and easy to access for authorized users.	To continue with training workshops for Institutional Environmental Management Programme (PGAI's)	$ 4,583	6 Training sessions to customs officer about the new regulations include in the Montreal Protocol.	$ -	$ 4,583
UNDP	Strengthen capacity of HCFC recovery and use.	Continue with distribution of R&R equipment and recovery cylinders within the existing national R&R system.	$ 24,147	Increase the national capacity to collect non-reusable refrigerant gases. Encourage the private sector to maximize the reuse of refrigerant gases in RAC systems. 4 trainings to collection center personnel.	$ 20,000	$ 44,147

UNDP	Establish a mechanism for storage of unwanted ODS including HCFCs.	Continue with meetings between industry and government to promote HCFC phase out and ODS destruction options	$ 20,906	Define and implement logistics for the collection of unwanted gases. Monitoring the process of destruction of stored refrigerant gas. Commissioning of the system for the destruction of waste refrigerant gases.	$ 20,000	$ 40,906
UNDP	Implementation of a Monitoring Unit		$ (15,230)	Technical and managerial assistance to project activities	$ 58,000	$ 42,770
TOTAL			**$ 54,766**		**$ 106,000**	**$ 160,766**