UNDP Project Document

UNDP-MLF

Government of Ghana

United Nations Development Programme

GHA/PHA/61/INV/30 & 31– Hydrochlorofluorocarbon Management Plan (HPMP) for Ghana

The HPMP will result in the complete phase out of 925.3 tonnes (49.5 ODP tonnes) of HCFCs in Ghana by 1st January 2040 in line with the obligation taken by the Government of Ghana under the Montreal Protocol on Substances that Deplete the Ozone Layer. Phase 1 Implementation Programme which is the extended Stage 1 of the HPMP (to cover Stages 1 and 2) will result in the phase out by 1 January 2020 of 17.3 ODP tonnes of HCFCs, which is equivalent to 35% of Ghana's agreed baseline HCFC consumption (See section IV.3.2).

Ghana is requesting financial support from the Multilateral Fund to cover part of the cost of phasing out the 17.3 ODP tonnes of HCFC consumption in accordance with the HPMP. With these allocated funds Ghana will undertake the phase out of all remaining CFC consumption. The requested funds will be allocated to Ghana over a three-year period.

UNDP is the lead implementing agency for the implementation of this HPMP. The Government of Italy (hereinafter referred to as GOI) is the cooperating implementing agency.

The first funding tranche of stage 1 of the HPMP, already approved by the ExCom is US $200,000 for UNDP and US $70,000 from GOI. However they will both be implemented by UNDP as one project with a combined budget which is as follow:

UNDP: US $1,031,311.00
GOI: US $325,000.00
Total Budget: **US $1,356,311.00**

Executing Agency: Environmental Protection Agency
Starting date: 1 October 2010

Much more detailed information on this programme can be found in the overall HPMP-document that was approved by the ExCom and which is covering all funding tranches of stage 1. The overarching HPMP document is attached to this UNDP project document.

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ACRONYMS

CFC	***Chlorofluorocarbon***
HCFC	***Hydrochlorofluorocarbon***
HFC	***Hydrofluorocarbon***
GOG	***Government of Ghana***
GOI	***Government of Italy***
EPA	***Environmental Protection Agency (Ghana)***
NACODS	***National Committee on Ozone Depleting Substances***
NOU	***National Ozone Unit***
IA	***Implementing Agency***
MLF	***Multilateral Fund***
ExCom	***Executive Committee***
ODP	***Ozone Depleting Potential***
ODS	***Ozone Depleting Substances***
RRRP	***Refrigerant Recovery/Retrofit Project***
SC	***Service Centre***
HPMP	***Hydrochlorofluorocarbon Phase-Out Management Plan***

SECTION I : Narrative

Ghana is a member state of the Economic Community of West African States (ECOWAS). It is located on the Gulf of Guinea of the Atlantic Ocean. The total area of the country is 238,533 square kilometres with 2,093 km of land borders with three French-speaking countries of Burkina Faso to the north, Côte d'Ivoire to the west, and Togo to the east and population estimated to be 23.8 million in 2008. Its southernmost coast is at 4° 30' north of the equator and extends inland for some 670 kilometres to about 11° north. The distance across the widest part is between longitude 1° 12' east and longitude 3° 15' west and measures about 560 kilometres. The Greenwich Meridian passes through the eastern part of Ghana at the port city of Tema about 40 km. from the capital, Accra.

The GDP for 2008 was reported to be US $34.04 billion distributed as follows:

- Agriculture: 37.3%
- Industry: 25.3%
- Services: 37.5%

Ghana recorded a growth in the GDP of 7.3% in 2008. The per capita GDP was US $1,500. In 2006 Ghana produced 8.204 billion kWh of electricity and consumed 6.76 billion kWh. It exported 755 million kWh of electricity and imported 629 million kWh.

Ghana has been a party to the Vienna Convention for the Protection of the Ozone Layer and to the Montreal Protocol on Substances that Deplete the Ozone Layer since 22 October 1989. Ghana has also ratified all the amendments to the Montreal Protocol, emphasizing its strong commitment to take necessary measures to protect the ozone layer.

Historically consumption of HCFCs in Ghana has typically been HCFC-22 used as refrigerant in the refrigeration servicing sector, for servicing of residential and commercial air conditioners and chillers as well as refrigeration equipment with larger refrigerant charge, such as commercial and industrial refrigeration equipment. Since 2007 in the domestic refrigeration servicing sub-sector, increasing use of HCFC-based refrigerant blends, typically R406a as interim replacement for CFC-12 and R502 refrigerants has resulted in the phase-in of increasing amounts of HCFCs in the form of HCFC-22, HCFC-142b. Another dimension to ODS consumption in the refrigeration servicing sector is the import annually of large consignments of used refrigerators and freezers mainly from Europe and North America which could increase demand for refrigerants, especially of R406a which is near drop-in HCFC blend.

The HPMP will ensure sustainable and cost-effective phase-out of HCFCs through implementation of a combination of interrelated institutional and regulatory measures, training and other investment activities that have already proved effective in the past during the implementation of the country programme.

Strategy

The objectives of Phase 1 of the Hydrochlorofluorocarbon Phase-out Management Plan (HPMP) are to establish an enabling environment for safe use of hydrocarbon refrigerants and achieve timely, environmentally sound, sustainable and cost-effective phase-out of 17.3 ODP tonnes of HCFCs as required under the Montreal Protocol through a combination of regulations, training and certification of technicians,

focused sensitization of target groups, refrigerant recovery and retrofit projects and end-user incentive programmes.

UNDP and GOI (through the Ministry of Environment and the Sea) will be in charge of the implementation of the activities approved under the HPMP. The total approved funds for implementing the activities under the first phase of the HPMP will be released biennially in five tranches from 2010 to 2018 in accordance with the agreement between the ExCom and the GOG as provided in Annex I to the HPMP.

The challenge for Ghana to phase-out the use of HCFCs in the refrigeration servicing sector based on low GWP, energy efficient refrigerants, is to ensure that the execution of HCFC retrofit, recovery and recycling programmes and introduction of new servicing practices are done in a safe and sustainable manner and are acceptable to a large section of the servicing industry as well as end users. In this regard the bilateral cooperation with the GOI is expected to play a major role in achieving some of these objectives, in particular the development of safety standards and norms in the use of hydrocarbon and other natural refrigerants as well as in the development of more efficient monitoring procedures through the use of paperless system. It is desirable from the onset to engage relevant trade and industry associations and as well as relevant governmental organizations through focused sensitization activities in the planning and execution of training and certification, recovery and recycling and other programmes.

The following activities will be implemented during the period 2010-2011 of the Phase I Implementation Programme of the HPMP: Establishment of the regulatory environment (GOI); focused sensitization of target groups (GOI); some components of training and certification for HCFC servicing (UNDP); some components of RRRP (UNDP); monitoring and technical support (GOI) (UNDP).

In order to achieve the targets set out in the HPMP it is essential to adopt a flexible approach to adapt to unforeseen changes in the market.

The approved HPMP document together with Annex I (Agreement) and appendices to the document is attached to the present document.

Management Arrangements

The HPMP will be managed as nationally executed project (NEX) by the Government of Ghana through the National Ozone Unit (NOU).of the Environmental Protection Agency (EPA), Ministry of Environment, Science and Technology. The Coordinator of the NOU will be responsible for day-to-day management of the activities of the HPMP with assistance from Assistant Ozone Coordinator and/or relevant national consultants. A Technical Management and Monitoring Committee (TMMC) will be established under an expanded NACODS to assist the NOU as set out in section VI of the HPMP. Thus the role of the NOU will include the following:

- Initiating and expediting the timely implementation of the activities set out in Section V of the HPMP (Management of HCFC supply and demand), paragraphs 152-154;
- Facilitating the expansion of NACODS and the establishment and functioning of the TMMC as set out in Sections VI.1 and VI.2 of the HPMP;
- Monitoring of the progress of implementation of projects and activities under the HPMP,
- Interaction with relevant governmental and non-governmental organizations and stakeholders to facilitate effective implementation and monitoring of the activities under the HPMP.
- Keeping records of relevant data as well as day to day activities under the HPMP and preparing/providing reports as may be required by IAs or the Government.

The Executive Director of EPA will have general oversight responsibility for the management of the HPMP in line with laid down administrative procedures of the country.

UNDP will assign its staff to the HPMP to provide project assurance.

In accordance with standard UNDP procedures, all resources/equipment gained through project support remains the property of UNDP until project closure when a decision will be taken as to how to dispose of these resources. It is standard practice to leave resources with DI after project closure as a contribution to the development of national capacity.

SECTION II: STRATEGIC RESULTS FRAMEWORK

First Stage Implementation of the Ghana HPMP

The Phase 1 of the Hydrochlorofluorocarbon Phase-out Management Plan (HPMP) is to establish an enabling environment for safe use of hydrocarbon refrigerants and achieve timely, environmentally sound, sustainable and cost-effective phase-out of 17.3 ODP tonnes of HCFCs as required under the Montreal Protocol through a combination of regulations, training and certification of technicians, focused sensitization of target groups, refrigerant recovery and retrofit projects and end-user incentive programmes.

HCFC Reduction Targets and Associated Funding in Stage 1.

	Estim. Baseline	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total
Montreal Protocol reduction schedule of Annex C, Group I substances (ODP tonnes)	49.5	21.7	NA	NA	49.5	49.5	44.5	44.5	44.5	44.5	44.5	32.2	NA
Maximum allowable total consumption of Annex C, Group I substances (ODP tonnes)	49.5	21.7	NA	NA	49.5	49.5	44.5	44.5	44.5	44.5	44.5	32.2	NA
Lead IA (UNDP) agreed funding (US $)		200,000		200,000		190,000		195,000		125,000	121,311		1,031,311
Support costs for Lead IA (US $)		15,000		15,000		14,250		14,625		9,375	9,098		77,348
Cooperating IA (Italy) agreed funding (US $)		70,000		60,000		70,000		65,000		60,000	-		325,000
Support costs for Cooperating IA (US $)		9,100		7,800		9,100		8,450		7,800	-		42,250
Total agreed funding (US $)		270,000		260,000		260,000		260,000		185,000	121,311		1,356,311
Total support costs (US $)		24,100		22,800		23,350		23,075		17,175	9,098		119,598
Total agreed costs (US $)		294,100		282,800		283,350		283,075		202,175	130,409		1,475,909
Total phase-out of HCFC-22 and HCFC-142b (used in R-406a) agreed to be achieved under this agreement (ODP tonnes)													17.3
Phase-out of HCFC-22 and HCFC-142b (used in R-406a) to be achieved in previously approved projects (ODP tonnes)													0.0
Remaining eligible consumption for HCFC-22 and HCFC-142b (used in R-406a) (ODP tonnes)													32.2

Time Schedule

The time schedule (implementation milestones) for the activities for Stage 1 of the HPMP is as indicated below.

Time Schedule					
Activity	2010-11	2012-13	2014-15	2016-17	2018-20
1) Establishment of the Regulatory Environment					
2) Focused Sensitisation of Target Groups					
3) Training and Certification for HCFC Servicing					

4) Refrigerant Recovery/Retrofit Project (RRRP)					
5) End-User Incentive Programme (EUIP)					
6) Monitoring and Technical Support to above Components					

Expected Results

1. Safe Use of Hydrocarbon Refrigerants and Upgrade of the Regulatory Environment

Objectives: (a) to institute an enabling environment for the safe use of hydrocarbon and other natural refrigerants and (b) to enhance the legal backing for the phase-out of HCFCs in Ghana.

(a): Safe use of hydrocarbon and other natural refrigerants

Although the level of use of hydrocarbons currently is not as high as other refrigerants, it is envisaged that hydrocarbons will become a widely used refrigerant in Ghana, especially in view of the fact that appliances coming from Ghana's traditional exporters of domestic and other refrigerators and air conditioning equipment, already converted to these alternatives. At the moment besides initial training provided under the TPMP, no other action has been taken to ensure safe use of these refrigerants. Under this activity a core group of Ghanaian refrigeration engineers and technicians will be provided on-site training in a country where the use of hydrocarbons is well established to study all aspects of the use of hydrocarbon and other natural refrigerants such as CO2 and ammonia in order to assist in establishing and enforcing the norms, regulations, and code of practice etc necessary for safe use of the substances.

(b): Legal framework for the management of HCFCs in Ghana

The study of the legal and institutional framework for the management of ODS in the country which was undertaken by a senior legal consultant in connection with the preparation of the HPMP, identified a number of issues that could hamper the successful phase out of these chemicals. With the assistance of a national and a foreign legal expert from a non-Article 5 country with experience in the phase-out of HCFCs, recommendations will be made to Government on the harmonization of laws governing the management of these chemicals.

2. Focused Sensitization of Target Groups

A survey conducted under the TPMP established the need for continuous public awareness programmes in view of the low level of awareness among certain sections of the public. While the institutional strengthening project has had a component related to public awareness, it was geared to the public at large, schools, mass media, etc. The kind of public awareness proposed in the HPMP however would be focused to the Importers, Distributors, Refrigeration Associations, Ghana-missions abroad (with regards to export of appliances by Ghanaians who are living abroad) and other focus groups. As such, the sensitization activities would be of a different nature than the activities of the Institutional Strengthening project. In view of the wider use of HCFCs and the complexity of its phase-out, the awareness activities will be continued taking account of the lessons learned in previous programmes.

3. Training and Certification for HCFC Servicing

Under the RMP and TPMP training was provided to Customs officers and refrigeration technicians. As part of the training of technicians, the technicians were taken through a quick reference manual developed by Accra Technical Training Centre. Customs, Excise and Preventative Service officers were provided with refrigerant identifiers for distribution to ports of entry. Additional training however is needed and would focus on hydrocarbon related and other low-GWP technologies. As such this activity would be complementary to previous courses focusing on CFCs only. The training would also be complimentary to

the efforts that would be provided by the GEF-funded Energy Efficiency programme. The latter would only deal with early retirement of energy less-efficient domestic refrigerators and their dismantling. Due to the nature of HCFC conversion, retraining of technicians will be undertaken under the HPMP. The HPMP-related training would include institutes that have been established before and they will be upgraded with newly supplied equipment. Activities will include the following:

- Upgrade the National Refrigeration Demonstration Cenre (NRDC) located at the Accra Technical Training Centre (ATTC) so that they would be able to provide training regarding servicing and retrofitting larger RAC systems. The NRDC would also have a facility for rental of equipment to refrigeration technicians. NRDC should thus be able to provide training on these matters to application engineers, designers, installers and master craftsmen. These in turn would collaborate with architects, surveyors, civil engineers and builders in the application of RAC systems using Valuable Air Volume (VAV) and Variable Refrigerant Volume (VRV) systems, hydronic systems, energy recovery systems, chillers, multi-ducted systems in the application of air-conditioning in high rise office and commercial buildings.

- As such it is proposed to upgrade the NRDC to become a "Centre of Excellence" for the training aspects of the refrigeration sector in Ghana.
- Support for the establishment of two smaller additional training centres (one for the southern sector in Kumasi and one for the northern sector of the country).
- Extension of the training activities to include officers of Factories Inspectorate, Distributors, Importers, Sales Personnel and Fire Service (with regards to HC-related safety concerns).
- Update of the Quick Reference Manual with information on hydrocarbon technology and covering larger RAC equipment.
- Provision of identifiers to the Customs Excise and Preventive Service (CEPS) and other stakeholders which may be identified later.
- Training and retraining of Customs Officers (to control, monitor, identify imports of HCFCs and their blends).
- Training and retraining and certification of refrigeration technicians in collaboration with the Council for Technical and Vocational Education and Training (COTVET).

4: Refrigerant Recovery & Retrofit Programme (RRRP)

Refrigerant conservation is the effort to extend the useful life span of refrigerant by establishing efforts to recover and reuse refrigerants. While such efforts were initiated during the CFC-phaseout, most equipment purchased was not able to deal with HCFCs and sectors such as Air Conditioning were never covered before with the exception of the Mobile Air Conditioning. In addition, most equipment purchased has already broken down and has outlived its useful lifespan. The benefits of the RRRP include

a) Ability to recover refrigerant and decreased dependency on virgin refrigerant.

b) Increased use of hydrocarbon-based equipment thanks to increased numbers of retrofits to hydrocarbon technology.

c) Proper design and installation of new refrigeration and air conditioning equipment so as to minimize actual or potential refrigerant leakages.

d) Periodic leak testing of existing refrigeration and AC systems so as to reduce emissions;

e) Enforce the code of good refrigeration practices and improve service practices, including use of refrigerant recovery equipment;

f) Safe handling, storage, transportation and disposal techniques that provide for refrigerant recovery systems at the point of final disposal.

The RRRP will assist 16 Servicing Centres (SCs) throughout Ghana as per following table. Selection criteria may be determined by NACODS or a specialized committee established under NACODS to assist in the selection of these centres, but could include following selection criteria:

- The company must be registered under the Ghana's company registration Act.
- Total number of technical staff.
- Tax obligation.
- Knowledge about the ozone layer depletion.
- Volume of refrigerant usage for repairs, installation and maintenance per month.
- Existing maintenance agreement with end-user companies, hospitals, hotels and other institutions
- Frequency of training of technical staff.
- The workshop environment and in-house keeping.

The SCs will receive a standard set of equipment that will allow them to recover refrigerant and retrofit appliances to hydrocarbons. Each centre will also have a performance-based contract which would provide them with an incentive towards their operational costs. After receiving a one-time advance, further payments would depend on the amount of recovered refrigerant and/or the number of retrofits to hydrocarbons. The size of the equipment-lot and subcontract amount may vary depending on the size of the operations that may be anticipated in each one of them. Precise details on the TOR for the subcontracts will be established at the outset of the programme.

City	Nr of Centres
Accra	3
Tema	2
Kumasi	3
Takoradi/Mines	2
Koforidua	1
Tamale	1
Sunyani	1
Ho	1
Upper East	1
Upper West	1
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The RRRP was conceived so that it fits into the overarching strategy of the overall refrigeration sector as contained in appendix A. Recovered refrigerant that can no longer be reused would be sent through the

Servicing Centres (SCs) where they would be accumulated in cylinders. From there, the pilot ODS-waste project has a budget that would allow transport by road to the ODS Destruction Centre that would be established in Accra. This is also where ODS-Waste from the Used Appliances Collection and Disposal Facilities (UACDFs) forming part of the GEF-funded Early-Retirement Scheme would also be destroyed.

The low price of HCFC-22 compared to the alternatives poses a challenge to the success of RRRP programmes. Such challenges should be addressed through the institutional and regulatory actions under the HPMP. As recommended by the RAC Technical Options Committee Ghana will take the opportunity afforded by the implementation of the HPMP to leverage the knowledge gained from developed countries, especially its bilateral partner, Italy, during the implementation of the conservation programme.

All consultants that would be involved in this programme have been listed under section V.6 below. Other activities will include (see more details in appendix B):

a) Set of equipment for recovery/retrofit for up to 16 Servicing Centres

b) Performance-based 2 years subcontracts with up to 16 Servicing Centres)

c) Training workshops for up to 16 Servicing Centres

5.: End-User Incentive Programme (EUIP) for the Retrofit of Residential and Commercial RAC and the Industrial Refrigeration Sectors

While the previous programme is geared towards the servicing technicians and repair-men, the EUIP will be benefiting end-users of existing refrigeration systems. Residential and Commercial RAC and the Industrial Refrigeration units that have not reached their end of useful life will be selected to be replaced or retrofitted with the view to convert them to no-ODP and – preferably - low-GWP technology to replace HCFC-22.

Details on selection criteria will be similar to the previous end-user incentive programme for CFCs which has been very successful in Ghana. A revised background note was drafted and is attached as Appendix E, but it should be finalized at the beginning of the implementation of the EUIP. While HFCs and their blends would continue to be used priority will be given to conversions to hydrocarbon and other natural refrigerants where mature technologies to enable their use are available and where assurances are provided that adequate safety precautions will be taken.. Selection criteria will be revised by NACODS in cooperation with the NOU or through a specialized committee established under NACODS to assist in the management of the Plan. The committee, if one is established will in collaboration with the NOU monitor compliance and sustainability of HCFC use (preventing reversion to HCFC-22 or other HCFC-based blends). The EUIP however would only envisage permanent retrofits of existing systems, unlike the CFC End-Users project which also contemplated replacement by new equipment.

The EUIP would not duplicate the efforts of the GEF-funded Early Retirement Scheme either, as the latter would mostly focus on domestic refrigerators.

All consultants that would be involved in this programme have also been listed under section V.6 below. Other activities will include:

a) Workshop for Outreach to End-User

b) Subcontracts End-Users

6: Monitoring and Technical Support to above Components.

Rather than splitting out the international and national consultants over the various components mentioned above, all of them were grouped into this HPMP-component. This makes sense as one consultant will often be covering the various components of the project. The consultants would provide the needed technical support to the HPMP and carry out the needed functions of monitoring the activities as well. Italy has also announced it would introduce a paperless system for establishing and keeping a database and monitoring system.

The inputs related to this component are the following:

(a) Monitoring system - paperless system

(b) International Consultant for Italy's activities

(c) International Consultant for UNDP's activities

(d) National Consultants

(e) Local Travel budget

Monitoring and Evaluation (M&E) Plan

In accordance with UNDP's programming policies and procedures, the project will be monitored through the following monitoring and evaluation plans:

- Project monitoring and evaluation will be conducted in accordance with established UNDP procedures and will be provided by the project team and the UNDP. This will be done through project implementation reviews, quarterly review reports, annual reports and a Project terminal report.
- Monitoring and evaluation (M&E) for this project will rely on several levels of review, quality control and feedback. Overall M&E will be conducted by UNDP through regular follow-up on the work programme by UNDP. Data collected through quarterly and annual reports shall be collated to track progress in achieving project results based on the results framework.

Quarterly and Annual Reporting

An annual report that harmonizes all quarterly reports shall be developed focusing on activities implemented in the year, outstanding activities, key results, challenges and new opportunities.

Periodic Monitoring

A detailed schedule of project reviews meetings will be developed by the Project Management in consultation with project implementation partners and stakeholder representatives.

Risk Log – HPMP Project

#	Description	Date Identified	Risk Category	Impact & Probability	Risk Treatment / Management Measures	Risk Owner
	Enter a brief description of the risk. Risk description should include future event and cause. *Risks identified through SEPS, and other assessments should be included.*	Enter date	*(In Atlas, select from list)*	Describe the potential **effect** on the project if the future event were to occur. Enter **probability** based on 1-5 scale (1 = Not likely; 5 = Expected) Enter **impact** based on 1-5 scale (1 = Low; 5 = Critical)	What actions have been taken/will be taken to manage this risk.	The person or entity with the responsibility to manage the risk.
1	Risk: Delay in the release of funds for project activities	January, 2011	Financial	The project objectives would not be achieved as intended. P = 2 I = 2	Delayed in the implementation of project activities resulting in not achieving the MLF set targets within the stipulated period	UNDP and Director of NOU
2	Risk: Safety and Security - Safeguarding security of project officials regarding enforcement and compliance of banned refrigerants into the country	March, 2012	Safety and Security	Inability to regulate and collect accurate data on refrigeration practices in Ghana with respect to compliance to the Montreal Protocol P = 2 I = 3	The National Ozone Unit ensures effective Coordination with the major stakeholders, to enforce regulations on the banned refrigerants.	UNDP and Director of NOU
3	Inability to organize physical meetings and/or travels due to public health restrictions	Mar, 2020	Operational	Delay in project implementation P = 2 I = 2	Facilities have been acquired by EPA to enhance online workshops and meetings. Where possible, trainings and meetings shall be organized online. Additionally, the EPA shall work in close coordination with Government of Ghana health institutions, and UN Country Covid-19 management team to explore strategies of implementing travel and meeting activities in a safe manner.	UNDP and Director of NOU

SECTION III: TOTAL BUDGET AND WORKPLAN (2010-2020)

Detailed Description of Activities with Costs

Activity	Components of Activity	Agency	Duration	Project Cost US$	Subtotals	2010	2012	2014	2016	2018-19
1) Establishment of the Regulatory Environment	a) Enabling Environmnt for Safe Use of HC	Italy	3Q10-4Q13	30,057	45,085	15,028	15,028			
	b) Legal Framwork for the Management of HCFCs	Italy	3Q10-4Q11	15,028		15,028				
2) Focused Sensitivisation of Target Groups	a) Information for importers, distributers, Refrigeration Associations	Italy	3Q10-4Q13	18,785	18,785	14,770	4,015			
	b) Brochures/handouts to Ghana missions									
	c) Information to focus groups									
3) Training and Certification for HCFC Servicing	a) Upgrade of existing Refrigeration Training Centre NRDC) to Centre of Excellence	UNDP	3Q10-4Q13	75,142		37,571	37,571			
	b) Establishment of 2 Training Centres (one in South, one in North)	UNDP	3Q12-4Q17	75,142			18,785	37,571	18,785	
	c) Training of of Factories Inspectorate, Distributors, Importers, Sales Personnel and Fire Service (re HC-safety)	UNDP	3Q12-4Q17	30,057			7,514	15,028	7,514	
	d) Upgrade quick reference guide	UNDP	3Q10-4Q11	3,757	184,098	3,757				
	e) Provision of Identifiers (45 pieces)	Italy	3Q12-4Q15	43,958			21,979	21,979		
	f) Training/retraining of Customs Officers (train the trainers)	Italy	3Q12-4Q19	63,312			8,833	7,820	15,028	31,629
	g) Training/retraining of refrigeration technicians (COTVET)	Italy	3Q14-4Q19	88,111	195,380			30,057	39,828	18,226
4) Refrigerant Recovery/Retrofit Project (RRRP)	a) Equipment see list	UNDP	3Q10-4Q13	147,804		111,238	36,566			
	b) Contingencies	UNDP	3Q12-4Q13	14,780			14,780			
	c) 3 recovery/retrofit wkshps	UNDP	3Q12-4Q15	15,780			5,789	9,990		
	d) Subcontracts with 12 full and 4 half centres (subcontracts for 2 years)	UNDP	3Q12-4Q19	252,477	430,841		31,560	63,119	63,119	94,679
5) End-User Incentive Programme (EUIP) for Residential/Commercial RAC & the Industrial Ref Sectors	a) Workshop geared to End-Users	UNDP	3Q14-4Q15	7,514				7,514		
	b) Incentives to End-Users	UNDP	3Q14-4Q19	171,688	179,202			9,343	58,148	104,198
6) Monitoring and Technical Support to above Components	a) Monitoring system (paperless system)	Italy	3Q10-4Q11	15,028		15,028				
	b) International Consultant (Italy)	Italy	3Q10-4Q19	50,721	65,749	10,144	10,144	10,144	10,144	10,144
	c) International Consultant	UNDP	3Q10-4Q19	50,721		10,144	10,144	10,144	10,144	10,144
	d) National Consultants	UNDP	3Q10-4Q19	169,069		33,814	33,814	33,814	33,814	33,814
	e) Local Travel for National Consultant	UNDP	3Q10-4Q19	17,380	237,170	3,476	3,476	3,476	3,476	3,476
				1,356,311	1,356,311	270,000	260,000	260,000	260,000	306,311
	Without Support Costs	UNDP		1,031,311		200,000	200,000	190,000	195,000	246,311
		Italy		325,000		70,000	60,000	70,000	65,000	60,000
		TOTAL		1,356,311		270,000	260,000	260,000	260,000	306,311
	Support Cost	UNDP	7.50%	77,348		15,000	15,000	14,250	14,625	18,473
		Italy	13%	42,250		9,100	7,800	9,100	8,450	7,800
		TOTAL		119,598		24,100	22,800	23,350	23,075	26,273
	Grand Total	UNDP		1,108,660		215,000	215,000	204,250	209,625	264,784
		Italy		367,250		79,100	67,800	79,100	73,450	67,800
		TOTAL		1,475,910		294,100	282,800	283,350	283,075	332,584

Annex

Monitoring Plan

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Track results progress	Progress data against the results indicators in the Results Framework will be collected and analysed to assess the progress of the project in achieving the agreed outputs.	Quarterly or Annually	Slower than expected progress will be addressed by project management.	EPA/ UNDP	N/A
Monitor and Manage Risk	Identify specific risks that may threaten achievement of intended results. Identify and monitor risk management actions using a risk log.	Quarterly or Annually	Risks are identified by project management and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.	EPA/ UNDP	5,000
Periodic Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the project.	Periodically	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.	UNDP	N/A
Project Report	A progress report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk long with mitigation measures, and any evaluation or review reports prepared over the period.	Annually, and at the end of the project (final report)		EPA/UNDP	N/A
Project Review (Project Board)	The project's governance mechanism (i.e., project board) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work	At least annually	Any quality concerns or slower than expected progress should be discussed by the project board and management actions	EPA/UNDP	5,000

	Plan to ensure realistic budgeting over the life of the project. In the project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.		agreed to address the issues identified.		

Evaluation Plan

Evaluation Title	Partners (if joint)	Related Strategic Plan Output	UNDAF/CPD Outcome	Planned Completion Date	Key Evaluation Stakeholders	Cost and Source of Funding
Tranche Evaluation and Verification	EPA	Yes	Yes	Prior to Tranche completion	EPA	30,000 Source: Project budget