

HCFC Phase-out Management Plan Project Progress Report January- June 2017

Leading Implementing Agency- UNDP

National Office:

ODS Unit

Department of Environment

Ministry of Local Government, Housing & Environment

List of Abbreviations

DOE	Department of Environment
DOF	Department of Fisheries
FFA	Forum Fisheries Agency
GWP	Global Warming Potential
HCFC	Hydrochlorofluorocarbons
HPMP	HCFC Phase-Out Management Plan
NOU	National Ozone Unit
ODS	Ozone Depleting Substances

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1. Introduction

Fiji's HCFC Phase-out Management Plan (HPMP), for compliance with the 2013, 2015 and 2020 control targets for HCFC consumption under the Montreal Protocol, was approved in the 65th Meeting of the Executive Committee held in December 2011 (i.e., Stage-I of HPMP). The total funding approved for implementation of Stage-I of HPMP is US \$ 332,500. Upon successful completion, the plan will result in reduction of HCFC consumption from 8.44 ODP tons in 2013 to 5.49 ODP tons in the year 2020.

After the revision of baseline from 152.83MT to 104.18MT in the 73rd Executive Committee in 2014, the HPMP Funding for Fiji was further reduced to US \$315,000.

The HPMP comprises of a combination of interventions such as technical assistance for adoption of HCFC free alternatives and minimizing HCFC consumption in servicing of refrigeration and air-conditioning equipment, training for service technicians and customs / enforcement officers, awareness, communications and management, coordination and monitoring in various HCFC consuming applications. These activities are to be implemented during 2012 to 2020, consistent with the provisions of the performance-based agreement between the Executive Committee of the Multilateral Fund and Government of Fiji and after completion of necessary administrative procedures for implementation.

The Government is ensuring that HCFC phase-out is being addressed in line with Decision V/8 which states that *“ each Party is requested, as far as possible and as appropriate, to give consideration in selecting alternatives and substitutes, bearing in mind, inter alia, Article 2F, paragraph 7, of the Copenhagen Amendment regarding hydrochlorofluorocarbons, to:*

- (a) Environmental aspects;*
- (b) Human health and safety aspects;*
- (c) The technical feasibility, the commercial availability and performance;*
- (d) Economic aspects, including cost comparisons among different technology options taking into account:
 - (i) All interim steps leading to final ODS elimination;*
 - (ii) Social costs;*
 - (iii) Dislocation costs, etc.; and**
- (e) country-specific circumstances and due local expertise”*

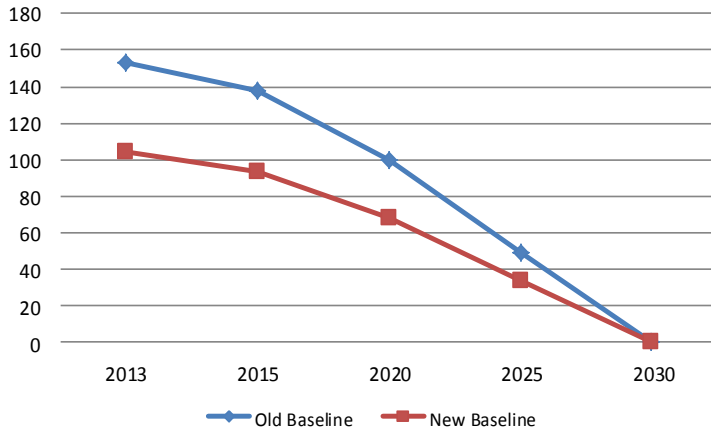
This is the main driving factor of implementation that has by far seen the conceptualization of HCFC Phase-out in the Fisheries Sector.

UNDP has been designated as the lead implementing agency and UNEP has been designated as cooperating agency for the project.

2. HCFC New Baseline

Fiji's baseline was revised during the 73rd Executive Committee meeting in November, 2014. The baseline was reduced from 152.83MT to 104.18MT with the removal of 48.65MT for the ODS supply of Foreign Flagged Fishing Vessels (FFFV).

The number of FFFV visiting our shores was increasing each year and to include ODS supply to these vessels poses a high risk of non-compliance due to high supply demand of HCFC.



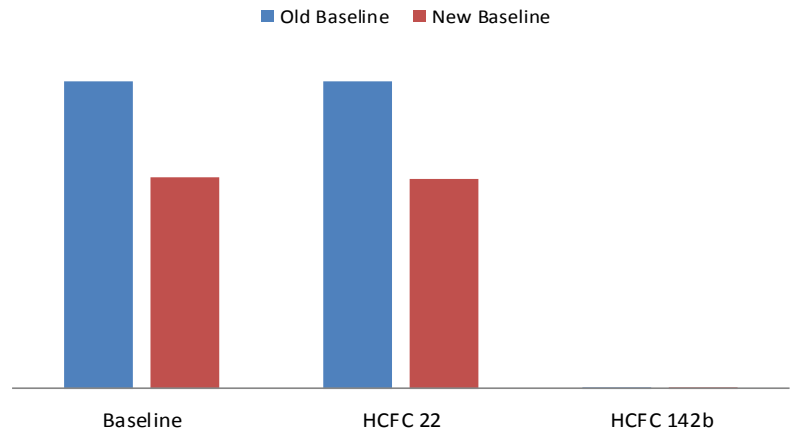
	Old Baseline (MT)	New Baseline (MT)
2013	152.83	104.18
2015	138.18	93.762
2020	100	67.717
2025	49.1	33.89
2030	0	0

Table 1: Old Baseline Vs. New Baseline in Metric tonnes

Graph 1 & Table 1 : Baseline comparison in Metric Tonnes

Table 2 & Graph 2: Baseline Comparison in Ozone Depleting Potential (ODP) tonnes

Substance	Starting point for aggregate reductions in consumption (ODP tonnes) 2011	Starting point for aggregate reductions in consumption (ODP tonnes) 2014
HCFC-22	8.37	5.73
HCFC-142b	0.04	0.04
Total	8.41	5.77



The formal submission of the baseline change for Fiji with supporting documents to the Executive Committee was submitted in 2016 and will await 2017 Meeting of the Parties (MOP) for its endorsement if approved.

3. HCFC Consumption Trend

The levels of consumption (imports- exports) of each HCFC imported as a pure substance and/or contained in blends (thus reported under Article 7 of the Montreal Protocol), is reported annually and the consumption rate from 2009 is as follows:

	Consumption Figures in Metric Tonnes			ODP Tonnes
	HCFC 22	HCFC 142b	Total Consumption	HCFC
2009	85.2663	0.6486	85.2663	4.689
2010	160.8117	0	160.8117	8.840
2011	177.3223	0.417	177.7393	9.775
2012	201.991	0.366	202.357	11.129
2013	201.991	0.366	202.357	11.129
2014	121.49	0.28	121.77	6.697
2015	70.02	0.32	70.34	3.8687
2016	74.43	0.09	74.52	4.0986

Table 3 & Graph 3: Consumption Comparison for HCFC 22, HCFC 142b and total consumption.

As observed from the above table, there has been an increase in terms of consumption from 2011- 2012. This was due to Fijian Government's initiative via "*Look- North¹ Policy*" in global affairs following the 2009 Pacific Islands Forum. Thus, during the past years, it accumulated in investments especially from Asian Countries in the fisheries sector that had led to an increase in fleets visiting our shores as Fiji used a fishing system where a limit was placed on the amount of tuna allowed to be caught in Fiji waters unlike the parties to Nauru Agreement (PNA).

Consumption rate dropped in 2013, with consumption freeze being the main factor on the 1st of January 2013. This continued to 31st December 2014 until it was further reduced by 15% on the 1st of January 2015. The supply of HCFC to foreign flagged vessels continues with more legislative measures in place. All supplies herein are considered as export, following all procedural requirements for an export.

Parties to the Montreal Protocol have not reached an agreement to address this issue as it is quite political and involves other crosscutting issues that are quite domain rather than HCFC supply itself. The question on whether there will be any future decisions to address the supply of ODS to Foreign Flagged Fishing Vessels is still unknown. This can only be addressed at National Level and Fiji has taken the initiative to setup a system, however, would require further amendments in due course.

4. 2017 AWP OUTPUT

4.1 Recovery and reclamation program

4.1.1 ODS policy/legislative/regulatory and institutional framework

Fiji was in the process of revising its ODS laws by way of formulating the ODS and Refrigerant Management [RM] Bill which was proposed to be endorsed by Cabinet in 2016. The final consultation for both draft Bill's had been completed in 2015 and final comments had been consolidated for further vetting by the Solicitor General's Office in February 2016. With the prolonged process of vetting of reviewed laws, the 2016 targets is still yet to be passed as laws (Amended ODS Act and the new Refrigerant Management Bill).

2017 targets the continued review of the ODS Laws but with new strategies, given the new Kigali amendment to the Montreal Protocol is in the process of being ratified in Fiji. The amendment is extending towards phasing down of hydrofluorocarbons (HFCs), which are used as substitutes for ozone-depleting substances (ODSs). Although HFCs are not ODSs, they are powerful greenhouse gases that have significant global warming potentials (GWPs). One of the requirements under the Kigali Amendment is to implement the Licensing and permitting system of the HFCs and thus, inclusion of the HFCs in the ODS schedule listings will be part of amendments to the law.

The option of synergizing the proposed two Bills (ODS Act & Refrigerant Management Bill) has been discussed internally this year and thus we are in the process of including ODS and Refrigerants (HFCs, HCs) into one document.

With its current ODS Act 1998 and subsequent Regulations 2010 mainly focusing on ODS, Fiji's National Ozone Unit [NOU] is already enforcing the above mentioned regulatory interventions through its licensing/ permitting system as well as the quota restriction to HCFC importers in line with the baseline value and HPMP phase- out schedules.

The new Bill will also focus on larger systems such as chillers due to their long economic lifespan. Legislative import controls on smaller equipment using HCFCs such as domestic/window air- conditioning units will be addressed in 2020. This is to give effect to **Decision V/8** of the Montreal Protocol especially in consideration of economic aspects.

Consultations:

Consultation is to be done for the 3rd quarter of 2017.

4.1.2 Reclamation Programme

One of the activities for Fiji under the HPMP Programme was to set up a Recovery and Reclamation (R&R) Centre to recover refrigerants from their system during servicing and maintenance and also to enable the reclamation of refrigerants that were contaminated. Recovery and Reclamation of used ODS are critical measures for the protection of the Ozone Layer in addition to regulating the use of HCFC as part of integrated phase-out measures in Fiji. The objective of such measures is to prevent unnecessary release of ozone depleting substances into the atmosphere and enable the reuse of refrigerants that were of good quality after reclaiming and recovering the gases.

Two (2) mini- reclaim units [along with accessories/ spares] were purchased in 2014 along with basic recovery tools such as manifold gauges, recovery cylinders, weighing scales, recovery machines and other equipment

that assist in proper recovery of refrigerants. This equipments have been procured for the industry. A proposal was made for the Department Of Environment and the Refrigeration and Air- conditioning (RAC) Association to establish a location and an R&R center in the western and central division whereby this equipments would be used.

DOE was searching for a suitable space for the R&R Centre to operate on a 3-6 months trial in the running of the center. Once result of the trial is gathered, awareness to the industry and the benefits of using the R&R centre can be done to encourage the industry taking ownership of the programme. FNU are willing to take in the equipments and run the trial. The Machines are now in the process of being transferred to the institution.

The recovery machines were purchased initially to be used at the R&R Centre for the purpose of converting contaminated refrigerants to its pure state. The National Ozone Unit technical team undertook a test run on the machine and reported that the machine cannot be used for reclamation purpose & recommend for industrial recovery of refrigerants. The NOU technical team also proposes for the machines to be lent to the RAC Institution in the meantime to assist students in the RAC trade with their practical work.

The Refrigeration Air-conditioning (RAC) Associations for the 2 centers in Fiji have indicated that they will not be able to proceed with the project, having the operation and gaining members as a priority and therefore other options have been explored including Solander Pacific Ltd and Government Shipping.

4.2 Retrofit Incentive Programme

4.2.1 Fishing Vessel Technical Working Group

A reviving Fisheries Sector Meeting was organized by the Department of Environment on the 2nd quarter, 2017 with the Fisheries stakeholders to activate the technical working group/ stakeholder working group and have more consultation with the Fisheries Sector in ways to move forward.

Further discussion was made on the 2010 survey of HCFC use in Fiji, which related that the Fishing Sector was the key consumer followed by the domestic servicing sector.

A retrofit trial undertaken by one of the local fishing vessel, Solander was also shared during the meeting and the challenges of this technical transition faced by the fishing industry. The recommendation given from the meeting is for the relevant Government Department and the Fishing Industry stakeholders to meet on a regular basis to discuss the use of ODS in the fishing sector and their obligations to the Montreal Protocol. With the transition of use of HCFC to HFC & HC there is a need for more awareness to be conducted so the fishing industry can prepare them for the technical changes and adopt viable options.

A survey specifically on the management of HCFC in the fishing industry was funded by UNEP in conjunction with the Pacific Forum Fisheries Agencies (FFA). Mr Melino Bain-Vete was recruited to conduct the survey. This survey has increased our knowledge on implementing such retrofitting projects on vessels.

It is important to note that all vessels in Fiji are second hand vessels and manufactured as far as 1971 and use HCFC refrigeration systems. After several consultations with stakeholders at the National and International Level, this remains a grey area and would require further extensive research including pilot projects to at least

provide more knowledge in this area. Maldives have also implemented this project through replacing HCFC/R22 with R438 as a direct drop-in a few European Union Countries have conducted retrofitting, however, only in new vessel refrigeration system.

In the 27th Meeting of the Parties, the Pacific Island Countries (PICs) recuperated on this issue and requested that the Technology and Economic Assessment Panel to conduct further research which is to be presented in the 37th Open Ended Working Group (OEWG) meeting as per “*Decision XXVII/4: 1 (a) (ii) The availability of alternatives for replacement and retrofit of refrigeration systems in fishing vessels, including in small island countries*”.

Partnership with the Fisheries Department has been strengthened which led to the participation of an Officer from the Department in the 27th MOP and a Consultant is soon to be recruited to work on a study on the fishing vessels.

Consultations:

DATE	VENUE	PARTICIPANT #
14 th June 2017	Department of Environment	7

Table 5: Stakeholder Consultations conducted in 2017

4.2.2 Service Technician Training

Good Practice in Refrigeration (GPR) is a 2 days’ workshop facilitated by the Department of Environment in conjunction with the Fiji National University’s - National Training and Productivity Centre (NTPC) through the Ozone Depleting Substances (ODS) Unit. It is part of the ODS Annual Work plan under Outcome 2 of the Retrofit Incentive Program.

The GPR workshop is a pre-requisite under the ODS Act for technicians to undergo in order to attain a License to Handle Controlled Substances; as part of the Licensing System. With Fiji’s commitment to phase out HCFC by 2030, it is vital for technicians to undergo this training and also be aware of technologies and alternatives that will also be introduced into the market to replace HCFC. The training is to enhance skills, improve working style and attitude of the RAC (Refrigeration & Air-Conditioning) technicians. The training of technicians through the Good Practices in Refrigeration (GPR) workshop is to ensure our obligations under the ODS Laws.

Service Technician Training is also captured under the UNEP work plan. Synchronizing both work plans under UNDP and UNEP to attain the same goal was successful foreseeing the incorporation of all requirements for both work plan made the training package more convenient.

Trainings:

DATE	VENUE	PARTICIPANT #
22 nd – 23 rd March	Fiji National University, Lautoka	23
26 th – 27 th April	TPAF, Narere	15

Table 6: Trainings (Good Practices in Refrigeration Workshop) conducted in the 1st & 2nd Quarter 2017

4.2.2 ODS Alternative Training

The first Hydrocarbon Training was held on September 2016 during the National Ozone Week in Labasa.

The main objective of the Hydrocarbon training was to train the RAC technicians on the safety aspects of flammable refrigerants and how to carry out the servicing of domestic refrigerators in the RAC sector. The

training focuses more on the R600 refrigerants since it is flooding the local market and Fiji is now facing challenges on repairing and maintenance services on Hydrocarbon refrigerants. The training focuses on addressing issues related with the introduction of the ODS Alternative/Hydrocarbon technology into the Fiji market. This HC training is part of the capacity building for the RAC technicians. This is to address the technical skill gap that exists in the RAC sector due to the new technologies that is entering the Fiji market.

DATE	VENUE	PARTICIPANT #
21-Feb-17	FNU, Marine Drive, Ltk	18
22-Feb-17	Capricon Hotel, Nadi	16
24-Feb-17	Sigatoka Town Council	22
17- 18 - May-17	FNU, Marine Drive, Ltk	22

Table 7: Hydrocarbon Trainings conducted in the 1st & 2nd Quarter, 2017

4.3 Project Management & Monitoring

4.3.1 Reporting Obligations

Country Report (CP) and Article 7 (A7) report were submitted on time.

1st and 2nd quarter financial progress report was submitted to UNDP office in the 2nd quarter, 2017.

4.3.2 Training & Monitoring Equipment

The Department will be procuring Personal Protection Equipment (PPEs) and uniforms for daily operations this last 2 quarters. In the 1st quarter the unit procured basic RAC tools & technical equipment; 2 refrigerators that will be used for the practical session during the Hydrocarbon Training.

Monitoring activities undertaken such as the fishing vessel surveys and inspections, trainings and other enforcement under the ODS Law 1998 and obligations under the Montreal Protocol.

4.3.3 Obligations to 73rd Excom Decision

Implementation of the new baseline is well underway and has been incorporated in the import quota. Submission had been made to the Excom Decision and is now currently waiting on the Meeting of the Parties (MOP) 2017.

5. FINANCIAL KEY FIGURES (USD)

UNDP

189,500

PROJECT COST (2013 – 2020)

315,000 (excluding AI support costs)

UNEP

USD 125,500

Budget per Programme Utilisation (%)

2017 BUDGET

USD 16,487.27

Budget [USD]

