



HCFC Phase-Out Management Plan (HPMP) Stage-II

Stakeholders Consultation Meeting

Organized by the

National Ozone Unit (NOU) – Egyptian Environment Affairs Agency (EAAA)

Ministry of State for Environmental Affairs of Egypt

In cooperation with

United Nations Industrial Development Organization (UNIDO),

United Nations Environment Programme (UNEP),

United Nations Development Programme (UNDP) &

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

Cairo, 2nd August 2016

Agenda

Registration	09:00	التسجيل
Opening and Welcome	09:30	الافتتاح و الترحيب
HPMP of Egypt; Achievements and Lessons Learned <i>By: NOU</i>	09:40	مشروع خطة إدارة التخلص من مواد (HCFCs) ، الانجازات والدروس المستفادة
HPMP as overarching strategy; Outline as per MLF Guidelines & Compliance targets and sectors <i>By: Lead Agency (UNIDO)</i>	10:00	مشروع خطة إدارة التخلص من مواد (HCFCs) كاستراتيجية متكاملة – الإطار العام حسب الشروط المرجعية للصندوق المتعدد الاطراف وأهداف الامتثال والقطاعات المستهدفة
Break	10:30	استراحة
Stage-II of the HPMP of Egypt; Projects and Components - Phase-out in Foam Sector (<i>By: UNDP/UNIDO</i>) - Phase-out in A/C manufacturing (<i>by: UNIDO</i>) - Overarching plan for the servicing sector (<i>by: UNEP</i>) - Promote the use of HC in RAC sectors (<i>by: GIZ</i>)	11:00	المرحلة الثانية من مشروع خطة إدارة التخلص من مواد (HCFCs) لجمهورية مصر العربية، المشاريع والمكونات: - التخلص من HCFC في قطاع الفوم (الرغويات) - التخلص من HCFC في قطاع صناعة التكييف - الخطة المتكاملة لقطاع الصيانة - تشجيع استخدام المواد الهيدروكربونية في قطاع التبريد والتكييف
Q&A	12:00	النقاش
Group Lunch	13:30	الغداء
Consultation Sessions on Phase-out strategy for the Servicing Sectors (<i>Including presentation on experience from Nigeria about HC Refrigerants</i>)	14:00	حلقة نقاش حول استراتيجية التخلص من HCFC في قطاعات الصيانة متضمنة عرض حول تجربة نيجيريا في إنتاج غازات التبريد الهيدروكربونية
Break	15:30	استراحة
Closed session for the Phase-out strategy for A/C manufacturing Sector	16:00	جلسة نقاش مغلقة حول استراتيجية التخلص من HCFC في قطاع صناعة التكييف

Report on the Second Day

The second day of the conference started at 11:5 A.M with a welcome speech.

The first presentation was given by Mr. Ahmed Al Orashy whose speech was about achievements and learned lessons. He mentioned the implementers of the project (UNDP, UNIDO) and specified their jobs. Then he defined HCFCs: a set of substances, governed by Montreal Protocol, used in air conditioning and manufacturing foam. Air conditioning manufacturing in Egypt usually used HCFC 22 by 61.77 % and foam manufacturing usually used HCFC 14. From 2009 to 2010 Egypt didn't exceed the allowed levels of HCFC. When HPMP was approved and funded in 2011, it aimed at freezing Egypt's level of HCFCs use. By 2018 they will be less than 25%. The project worked on increasing the efficiency of service centers and replacing the current production lines in companies with ones that doesn't depend on Ozone-pollutant substances. The companies that converted from using HCFC to other alternatives are *Mondial* in the 3rd quarter of 2015, *Al Araby* in 2015, and *Keryazi* that will convert in within next two months as they faced many problems. He also talked about PRAHA project in Gulf Countries for assessing the alternatives used in air conditioners manufacturing as some of them could be challenging; for instance because they are toxic. Egypt has implemented a similar project called EGYPRAHA that involved all air conditioning factories. However, in Gulf countries PRAHA is a stand-alone project, and in Egypt it is an initiative under the umbrella of HPMP project. Finally, in the 4th quarter of the year , a report on assessing alternatives will be made. He displayed a PowerPoint presentation that tackled HCFC's substances and application, the milestones and fund of the stage 1 of HPMP, an overall view on HPMP implementation, and progress status.

The second presentation was given by Mr. Amir William. He first clarified the job of UNDP that mainly focuses on foam manufacturing rather than other sectors like freezing. He said that from 2011 to 2015, after visits, consultation, announcements, supplying with machines, six factories were converted to alternatives. UNDP has been succeeded in phasing-out 60.89 ODP and shift to a new ozone friendly technology for the all 6 enterprises involved. The second part of work was signing memos of agreement with major chemical companies to convert to alternatives and help the smaller companies afterwards. He mentioned the challenges faced during implementing phase 1 like changing and update the project modality to avoid any bureaucratic barriers during the implementation. His PowerPoint presentation is was about HCFC's phase-out management plan – stage I, UNDP contribution, and activities in PU Foam.

Then the floor was Mr. Ranojoy Basu Ray, Consultant to UNIDO who gave an overview on stage 1. Then he talked about activities planned, conversion on domestic refrigeration, conversion with manufacturers, strategy developed, and UNDP future areas of work. After that he talked about the roles of other partners. First, UNEP developed phasing out strategy for services sector. Second, GIZ aims mainly to design safety regulations and provides training and capacity building for all technicians. The goal is to reduce the consumption of refrigerant gases in manufacturing, services, and foam by 20 % in 2020 and 75 % in 2025 according to Montreal Protocol. By 2030 the use of HCFC will be stopped. Then he displayed a graph about HCFCs imports in 2015, another for consumption (Metric Tons) by Sector, and another one for reduction in consumption. After that he explained the components of the overarching stage-approach strategy. However, conversion is hard in services sector because a lot of pieces of equipment are still in use. He stressed the need to a regulatory framework. When a sector is converted it should be guaranteed that it won't use HCFCs again. This is attainable by laws. The approach of the policy enforcement used is bringing technology and monitoring, management, and implementation.

The outline of stage 2: Status of implementation and a financial report of stage 1 activities; methodology, validation, and data of HCFC consumption; sector distribution of HCFC; phase out strategy and overarching strategy; and finally the second stage implementation program. His PowerPoint presentation tackled the strategy and outline of stage 2.

After that, Mr. Bert Veenendaal, International environmental and process specialist, foam sector program gave his presentation. He said the target of the program is eliminating all remaining HCFCs. This is achieved by providing technical and financial assistance, and establishing suitable conditions. The tasks for achieving targets are a survey on foam companies, agreeing on alternatives for HCFC, and a strategy for phasing out. Then he talked about the main five applications of HCFC which are domestic refrigeration, commercial refrigeration, rigid insulation foams, non-insulation rigid foams, integral skin foams. By the survey, the following results have been identified: 60 downstream users, 1,546 t HCFC-141b, 1 system distributor, 1 system importer. Then he discussed replacement technologies that include water/CO₂, hydrocarbons, (HFCs (R290)), METHYL format. He explained the strategy of work which is addressing users individually or as sub-sector and the suppliers who communicate afterwards with their small users. At the end of his presentation he mentioned the requirements of compliance and they are keeping technology affordable, providing financial incentives, restricting HCFC availability, enforcing fairness, and restricting HCFC import and export. In the PowerPoint presentation he explained the steps of implementing the strategy in foam sector

Then Eng. Ahmed Abo Al Soud, the Executive president of EEAA delivered his speech. The main points of his speech were confirming Egypt's commitment to Montreal Protocol and preserving Ozone and eliminating Ozone depletes. He said that Egypt could overcome many challenges and reduce HCFCs consumption. Adopting the strategy and finishing phase 1 decreased HCFCs consumption by 10%. Ozone depleters cause global warming and the international trend is to eliminate them. This was discussed in Vienna's meeting ten days ago. At the end of his speech he thanked Mr. Ezzat Lewis and the NOU.

After that, the floor was for Ms. Lamiaa Ben Abbas, UNIDO who conveyed greetings and best wishes to the participants from the headquarters in Vienna. She talked about the tangible achievements of the protocol and the discussions to modify it to add other HCFCs during the exceptional meetings.

She gave an overview on stage 1 then moved to the results of a survey done in air conditions manufacturing sector. The survey identified 8 eligible companies with total or partial Egyptian ownership. The companies were established after the cut-off date and their total R 22 consumption is 1.1 ton/year. She said that fund will be available after the endorsement of the project from MLF. She talked about EGYPRAHA initiative that allows companies assessing the potential elements for conversion. A gradual conversion was suggested starting from smaller equipment for smaller companies and then bigger ones. Concerning commercial refrigeration, there are 39 licensed SMEs consuming 40 ton of R22 per year. They will be subject to group projects depending on their production and they will receive technical and financial assistance. There are 187 unlicensed manufacturers with total R22 consumption of 40 ton/year. Addressing them will be through awareness and technical assistance but they won't be assisted for conversion. **Her presentation tackled the status of companies involved.**

Then the floor was for Mr. Ayman Al Talouny's, UNEP. He first gave an overview on Staged-Approach Overarching Strategy. He discussed the components of phase-out strategy which are phase-out in Foam Industry (XPS & PU), Phase-out in RAC Industry, Phase-out in Servicing Sector. Concerning servicing sector, work will not stop in 2030 because of "service tail". This concept means that some devices in service because they will need maintenance with the old techniques. He said there are about 100 alternative gases in service now. Some of them are prevented after awhile. Because developing countries adopt these alternative late, they use it after they are prevented in developed countries. Developing countries also struggle from the different alternative substances coming from east and west and inventory companies impose them. The alternatives in general are

questionable and would even be banned in the protocol. The properties of each substance make us reconsider the way of manufacturing. Since 1930 to 1985, people knew only 4 types of refrigerants then they became 10 main gases covering all applications. Since 2010, 37 gases were installed in service but they don't constitute all the applications. Then he explained the gradual implementation of overarching policy. He said that when the different sectors are converted, HCFC imports and goods should be prevented. He illustrated the non-investment activities paying special attention to legislation enforcement, standards and codes, and certification. He also highlighted the Refrigerants Market Surveillance Program (RMSP) that will be carried out in stage 2 to prevent cheating and using the prevented HCFC. . In his PowerPoint presentation, he explained in details the Staged-Approach Overarching Strategy.

Mr. Philipp Denzinger, GIZ, PROKLI gave a presentation on GIZ's mission. Then he gave an overview on the global trend of RAC in Europe. He discussed the available technical options and highlighted hydrocarbons for their many and a few disadvantages. Then he explained GIZ's training policy and concepts. He paid a special attention to servicing training in hydrocarbons and said that hydrocarbons technology is functional but complex in terms of safety. He mentioned the priority needs, benefits of training, and how to provide appropriate tools. The training plan and methods are explained in the PowerPoint presentation.

Mr. Bert presented ENG. Olatunji Oyefuga (CHIEF), Pamaque Nig. Ltd whom gave a presentation on the Nigerian conversion experiment using hydrocarbons. Mr. Bert gave a background about hydrocarbons and the objectives of using it.

Then ENG. Olatunji gave his presentation about production of hydrocarbon refrigerants and commercialization of the prototype plant. He said that the minimum purity of hydrocarbon is 99.7% and Minimal levels of critical impurities: moisture < 10ppm&unsuitable hydrocarbons and sulfur < 0.3%. The process of separation sequencing is simple and highly visible. There are built-in processes to jack-up the distillation efficiency. The plant designing is very critical basing on the analysis. The distillation column for the prototype plant is 8" diameter and this is good enough for the commercial plant. Then he mentioned the sources of raw material and the first is LPG from the refineries vary widely in composition. Greatest challenge is the C3 composition - usually C3H8 (Propane) and C3H6 (Propylene which are difficult to be separated by distillation. The second source of raw material is from the oil fields – Associated Petroleum Gas (APG) or Field Gas or Flare Gas. The next point he moved to is the constant power supply. Gas (Propane 95% purity) is the powered generator. The exhaust from the generator is also used for a steam boiler. Part of the steam is used for the re-boiler and the

remainder is used to produce chilled water. Concerning filling machines, there are two filling zones: canning, bottle filling for refrigerants and cooking gas and he displayed photos of them. Bottles are better than cans because they are safer, he commented. After that he explained environmental, health, and safety guidelines. He concluded the presentation with reviewing the challenges which are training and certification standards. In the PowerPoint presentation he explained in detail the substances to be produced and the process of production.

Discussion Session

Q1 by Mr. Bahaa Mahmoud from Ministry of Industry: what has been achieved in stage 1 concerning training? We have 20 training centers for cooling that will be developed by a loan from the Islamic Bank and we want to know the specification. If you like to train in phase 2 in one of our centers, we welcome that.

Q 2: would the students who are now trained to be maintenance technicians be taught every new thing about Freon to convince customers?

Q 3: R600 is natural and free from environmental or international duties, so what is its future?

Q 4: CO₂ is toxic, how could it be used as a commercial refrigerant?

- I didn't say that. I said some natural gases are toxic like Ammonia. CO₂ is not but conditions in Egypt don't allow it because it could be dangerous. CO₂ is not classified as toxic and if its quantity is over in a closed area, it becomes toxic. The problem is that it can't be used in a degree higher than 30. It is not even used in southern Europe.

Q 5: Concerning applying policies and markets surveillance, the organization for import and export control already examines the imported Freon in cooperation with NOU. There has never been an accident of an illegal Freon. If consumer's protection agency controlled there would be duplicity.

- When I presented policies, I didn't specify roles. I said that it is an extra role beside the traditional ones. We are stepping towards a more challenging stage of Montreal Protocol. In addition, the methods of illegal trade are increasing however strong security is in a country. Customs authority will

remain the first defense line and Consumer's protection is an extra defense line.

Q 6: In the industrial training council we are concerned with training and qualification. If we are thinking about training for air conditioning, can we have a financial support from HPMP?

Q 7 by an NGO representative: what is the role of NGOs? We want to cultivate and train but we don't know our role?

NGOs are very important because it is an issue if the ordinary citizen. You carry the message to citizens, help the government, are closer to society, and control the controllers. We are pleased to have the non profitable NGOs not only the stakeholders.

Q8 by a journalist: what are the specific points media personnel can be provided with to guide the reader when buying devices.

Any product should be labeled with the data of production date, expiry date, and energy level. The problem is that do we read data? We want to tell people about the importance of reading and understanding those data and signs.

Labeling is an official decision. However, when it comes to the forged labels, they harm the local product. That is why there is an interactive protection program you can install on cell phones. I suggest adding data about HCFC on labels

Q 9: What are the steps to be applied on the ground to convert production lines?

This workshop is the beginning. The current stage is developing a strategy to be applied as soon as we get the fund. This sector was not tackled in phase 1 so there is no commitment from the MLF.

The session dedicated for discussing training methods

Mr. Ayman Al Talony discussed training for hydrocarbons as it is one of the promising alternatives. There will be a committee for certification and training, and four work teams will emerge from it. Concerning refrigerant containment plan, there will be a national reclamation scheme and refrigerant containment and refrigerant leakage

prevention program. Concerning importing Freon, Freon 22 is the cheapest. Nevertheless, after China signs the protocol in addition to restrictions; F22 prices will increase. Then he moved to the point of codes and standards. He believes that the Egyptian code for cooling and air conditioning is more important than any other standards because it enables imposing correct measures. Academic institutions will be included in the project as the third component of the strategy is scientific and academic research.

After that ENG. Hassan from the industrial training council said that the council established a well-prepared training unit in which the council incorporated a new prospective in dealing with Freon. You can benefit from this unit; if not now, it will also be useful later on.

Mr. Ayman replied to this suggestion that he will contact with the unit very soon after contacting with his mates in GIZ because it is urgent and they don't have to wait till the endorsement is got.

Concerning question no.6 about having a financial support from the HPMP for the industrial training council, Mr. Ayman said that they will see if the cost of implementing the project would cover it or not. This is all controlled by funding limit.

At the end of the discussions, Dr. Ezzat said that communication does not go one way. I noticed in this hall that there are some stakeholders seeking development and others have already achieved it. Allow me to ask you not to limit communication between each representative and the EEAA. Make it a cross-cut communication. Thus, you can find a solution for your problems at the hands of another party. I call upon communication among all of you. If you would like, you can have the guest list to facilitate communication.

Dr. Ezzat Lewis concluded the conference by expressing his thanks and gratitude to all the members of NOU saying that they were the real makers of success.