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| **SDC ANNUAL REPORT FOR HPMP 2017** |
| **Name of IP: EPA** | **Reporting Date: January – December 2017** |
| **Date: 12th December, 2017** |  |
| 1. **RESULTS PERFORMANCE/ACHIEVEMENTS**
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| **Project Results** *State project results (outcomes of Output from approved project document or work plan* | **Indicators***The project outcome or output indicators as stated in the M&E Framework and/or AWP* | **Target***Targets agreed by project team on each on each indicator* | **Update on Results***A brief analysis on any relevant changes pertaining to the outcome or output achieved with respect to targets* | **Comments** |
| **Outcomes** |
| **Output 1: Training and Certification for HCFC Serving Industry** |
| To enhance the performance of refrigeration practitioners in good refrigeration practices in the trade in order to produce seasoned and well equipped technicians. The customs officers can isolate HCFC’s by the use of refrigerant identifiers. Other stakeholders will acquire knowledge on the trend of HCFC phase-out management. The two refrigeration Training Centres of Excellence would be equipped with refrigeration tools and equipment which have been imported by UNDP | Due to the nature of HCFC conversion training of technicians to follow the ethics in the conversion process. This is a new technology and the dynamics in the refrigeration industry indicates that sooner than later, HCFC and HFC will be phased out giving way to alternative natural refrigerants. Training customs officers at various border posts will enable them isolate HCFCs which is now being controlled. Two additional Training Centre of Excellence are being established in order to widen the catchment area on which trainings are to be made.  | Refrigeration Practitioners, Importers and distributors of Refrigerants and Customs Officer.  | Awareness and education of HCFC phase-out plan was introduced to the participants. From 28 August to 21 September,training and sensitization workshops were conducted for 224 (male-181; Female- 43) customs officers at Kpoglo/Akanu/Have (Ho), Kumasi, Elubo, Afloa Takoradi, Sunyani (Gonnokrom) and Peduase. The establishment of two (2) Centres of Excellence has also began with the refurbishing of the training rooms at Takoradi and Kumasi Technical Institutes. The National Ozone Unit has also taken delivery of tools and equipment for this purpose.  | With the arrival to the Refrigerant Identifiers, the training of Customs Officers to isolate controlled refrigerants. Their input would enhance Ghana’s HCHCs consumption level to be controlled.  |
| **Output 2. Refrigerant Recovery Recycling Project (RRRP)** |
|  Evaluation and Monitoring activities and provisions of input equipment to sustain and facilitate the programme in order that more refrigeration practitioners will get used to the hydrocarbon conversion technology as an alternative to HCFC22 in ACs. Ability to recover refrigerants by technicians to decrease our dependency on virgin refrigerant. Increase in use of hydrocarbon-based equipment. Periodic leak testing of existing A/C systems. Enforce the code of good refrigeration practices including the use of refrigerant recovery and recycling equipment  | HCFC 22 is widely used in A/C and cold store systems. Phasing-out HCFC22 must have an alternative esp.HC290. The technicians don’t have any fore knowledge about HC 290 conversion technology therefore they need to be trained. The developed countries have stopped the use of HCFCs in their systems and production of HCFCs have been reduced. | Refrigeration technicians in the Air Conditioning Sector  | The eleven RRR centre who undergone training are carrying out the conversion exercise in A/C. the tools and equipment which the HPMP project purchased for them are being put in good use. Equipment assets register has been opened for all the equipment and all the equipment have been labelled and verified. TheConverted A/Cs to run on HC 290 have all been verified. There has been no incidence of five risk. The qualities of A/Cs converted and R22 recovered has been attached. All converted units have been paid for by UNDP  | The quantities of A/Cs converted and R22 recovered has been attached. With the availabilities of HC290 on the market the trend is going to be increased.  |
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| **Data on Conversions of A/C to Hydrocarbon (HC290) from January 2017 to November 2017** |
| Four (4) Companies were involved in this activity: Justice Refrigeration, Freezing the World, Richsmith, Prescold and Capitec. | As of November 2017 a total 2293 A/Cs containing 3955.43KG of R22 had been converted  | On-going |
| **Output 3. Monitoring and Technical Support to all the Project** |
| To ensure a well coordinated and technically sound and effective project activities | To monitor the implemented activities under the HPMP | The national consultant, the international consultant | All the consultants recruited under the HPMP are carrying out the work schedule effectively, communicators among the consultants are swift, with their efforts, the ensuring years will carry, the project further up. | The area of paperless monitoring system is the only drawback because the two consultants on that sub project hardly communicate to the NOU. |
| **Output 4. End-user Incentive Programme** |
| The end-user incentive programme (EUIP) will eliminate as much as possible the consumption of HCFCs (R22 & R406a) in the cold storage facilities. It will further reduce our national consumption of HCFCs that can make Ghana compliant to the MO obligation | Financial and technical assistance for operators of cold storage facilities to enable them buy into the conversion of their systems to run on HCFC22 alternatives such as R404a, R134a, R402, R507, R290, R410 etc. | Ghanaian cold storage operators | An advert was placed in the print media for interested companies to apply. Four cold store companies: Bajejo, Home Support, Charlie boy and Broad water cold stores applied for consideration.  | All four companies have duly converted and have been duly paid. |
| 1. **GENDER SPECIFIC RESULTS** *[Please report specific gender disaggregated results]*
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| The Refrigeration industry is highly dominated by males however there are few females who are practicing or studying the trade in technical institutions and Polytechnic as well as individuals workshops |
| 1. **PROJECT IMPLEMENTATION CHALLENGES***[Observed or experienced challenges that are generic, related of not related to any specific output, which have or could affect the project implementation and propose a way forward]*
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| 1. There are a lot of technicians who are ignorant about the HC290 conversion technology because it’s now being transferred to Africa
2. The tools and equipment distributed were insufficient. If they were many, more technicians will benefit from it and the number of conversions would also increase
3. Due to the nature, location and heights, females are fewer in the refrigeration trade.
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| 1. **LESSONS LEARNED AND OPPORTUNITIES***[Please describe new understanding or insights gained from project activities that can contribute to improving project implementation and future project design]*
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| * People are now becoming aware of hydrocarbon A/Cs and their benefits offering a potential for wider penetration
* A lot of people only know CFC phase-out and not HCFCs
* Improper records keeping by the cold store operatives makes it difficult to fill the incentive application forms
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| 1. **RECOMMENDATIONS AND PROPOSED ACTION**  *[Actions on any matter related to outcome, progress of outputs and corrective measure taken or to be taken with responsibilities time time]*
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| * There should be books and literature on the hydrocarbon technology so that practitioners can read and enrich their knowledge
* Practitioners can also go to the internet to browse for further information by taking them through computer training, senior technicians and the junior ones must all be taken through computer training.
* Non-certified practitioners should not be allowed to apply the trade or allowed to undertake or handle any hydrocarbon application
* Future projects must include purchase of tools and equipment for the technicians. This can enable them deliver quality output.
* Conversion of A/c units to run on HC290 must be continued to enable Ghana reduce her dependency on HCFC 22 to meet the MP freeze levels
* Capacity building in the form of training and seminar and workshops should be encouraged to make practitioners be abreast with new technological innovations from the advanced countries
* Upscale the training of more technicians in the HC conversion to prevent the temptation to engage in it whiles they don’t have the requisite expertise
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| 1. **KEY ACTIVITIES FOR 2018** *[Please outline key activities planned for 2018]*
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| * Complete establishment of Refrigeration Centre of Excellence at Takoradi and Kumasi Technical Institutes
* Refrigerant Recovery and Recycling Project.
* Training and Retraining of refrigeration Technicians and Certification
* Continuous training of Custom Officers from Ghana Revenue Authority
* Incentive pack for cold store operators who convert from HCFC22 to HFC, R410a, R404a, R507c etc
* Monitoring of all the HPMP subprojects.
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