



**Programa de las Naciones Unidas para el Medio Ambiente
Oficina Regional para América Latina y el Caribe**

UNITED NATIONS ENVIRONMENT PROGRAMME
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT
PROGRAMA DAS NAÇÕES UNIDAS PARA O MEIO AMBIENTE

**Montreal Protocol, Regional Workshop on
Alternative Technologies for the Air-conditioning
and Refrigeration Sector and Preparatory Meeting of
the English Speaking Caribbean Ozone Officers**



**Kingston, Jamaica
August 28th – September 1st 2006**

CONTENT

I. INTRODUCTION

II. OBJECTIVES

III. SUMMARY OF PRESENTATIONS AND DISCUSSIONS

IV. CONCLUSIONS AND RECOMMENDATIONS

V. ANNEXES

a. Agenda

b. List of Participants

c. Workshop assessment by participants

d. List of Presentations

I. Introduction

1. As continuation of UNEP ROLAC Compliance Assistance Programme (CAP) duties, there is a mandate for capacity development and technology support for National Ozone Officers and key stakeholders in order to achieve compliance of the Montreal Protocol. Among the main stakeholders in the Caribbean, the Air Conditioning and Refrigeration sector is the single largest user of ODS in this region and in 8 out of 11 countries, this sector is the only user of ODS to be phased out under the Montreal Protocol.

2. Accordingly, a request was made by the Caribbean network to UNEP/ROLAC for training in longer term alternatives for the Air Conditioning and Refrigeration sector and be able to adapt changing technologies in substitution of ODS and lead the region into the final stages of ODS phase-out in compliance with the Montreal Protocol.

II. Objectives

3. Among the main objectives, the following were addressed in the sessions of the Workshop and of the Preparatory Meeting:

- Provided participants with the awareness and skills for addressing and delivering on national mandates and policies for the Montreal Protocol and on alternative ozone friendly technological adaptation through the use of a combination of theoretical and practical/hands-on training modules
- Provided a working and information sharing environment between the National Ozone Officers and technicians for addressing Montreal Protocol issues and mandates, including addressing new and emerging national and regional challenges
- Provided National Ozone Officers (NOO) with the required skills and capacities for the implementation of national programmes for the meeting and sustaining compliance with the Montreal Protocol on the phase out of ozone depleting substances
- Prepared and agreed on the 2007 work plan for the Caribbean Network of ozone officers, and
- It is expected that upon return to their respective countries, participants would continue to deliver to the wider national community the lessons learnt and proceeding for this meeting.

4. The aforementioned objectives were delivered up through the use of a combination of south/south and north/south technology support and sources, through experience and lessons learn sharing, practical hands on training on alternative technologies, and by joint working sessions between the National Ozone Officers and Industry Experts.

5. As well, the Workshop and Preparatory Meeting was considered to be a favorable space for the Multilateral Fund Secretariat to carry out evaluation surveys of the UNEP Compliance Assistance Programme, which was performed with personal interviews of the International Consultant to the National Ozone Units representatives. Said interviews were mainly based on the surveys provided by the expert.

III. Summary of the presentations and discussions

Monday August 28, 2006

6. The sessions on Monday were directed to the Air/conditioning and Refrigerant technicians and were held in the Knutsford Court Hotel. They began at 8:30 a.m. and ended at 4:15 p.m.

7. Mr. Horace Nelson welcomed the technicians and the National Ozone Officer of Jamaica, Ms. Nicol Walker, welcomed the participants on behalf of the Government of Jamaica, encouraging as far as possible that the participants used this Workshop as a medium for sharing on experiences and lessons learnt in the process of adaptation to alternative technologies.

8. Ms. Artie Dubrie from UNEP/ROLAC thanked the Government of Jamaica for agreeing to host the Workshop and she also expressed thanks to the representatives of Cuba for their contribution in sharing on their experiences on technology transfer. Ms. Dubrie then gave the attendants a summary containing the objectives of the Workshop, which will be numbered further below in this report.

Review of Basic Principles of Refrigeration and Refrigerants Used in A/C and Refrigerants in the Region Including Sources

9. Mr. Horace Nelson, from the University of Technology of Jamaica, gave a presentation on basic physic principles in refrigeration. In particular, he spoke about the concepts handled in this field about thermodynamics, heat transfer, methods of heat transfer, the Mollier Chart and the way to use said chart.

10. He particularly showed the refrigeration cycle and explained how it could be represented on the Mollier Chart, through the steps of vaporization, compression, condensation and expansion. He further explained the cycle program stressing the importance of understanding the same for maintaining a correct refrigeration.

11. Afterwards, Mr. Anthony Smith from Barbados gave details to the participants on the refrigerants that are currently being used in the region as well as the sources they are obtained from.

Safe Handling and management of Refrigerants

12. The representative from the Universidad de Oriente in Cuba gave a lecture on the safe handling and management of refrigerants, highlighting that in the evaluation of safety characteristics of a refrigerant, the two factors "flammability" and "toxicity" play especially important roles.

13. He spoke about the flammability and toxicity classifications and explained how some of the know refrigerants are classified. The representative from Cuba further talked about refrigerant blends and that a difference must be made between azeotropic and zeotropic mixtures.

14. Finally, he showed by way of example all the technical and safety information for CARE refrigerant fluids, illustrating information on identification and composition of the product, hazards identification, first aid measures, fire-fighting measures, accidental release measures, handling and storage, exposure control and personal protection, physical and chemical properties, stability and reactivity, toxicological, transportation, regulatory and ecological information, and disposal considerations.

Approaches to establishment and enforcement of Air Conditioning and Refrigeration Codes and Standards: Canada experience

15. Mr. Ron Verch, international consultant and trainer for UNEP, UNDP and Environment Canada, addressed the issue of the Canadian experience with the establishment and enforcement of Codes and Standards for the Air Conditioning and Refrigeration sector.

16. Firstly he explained that after the signing of the Montreal Protocol in 1987, Federal Halocarbon Regulations, Phase-Out strategies, a National Action Plan and a Code of Practices were adopted in his country involving different agencies such as Federal, Provincial, and Territorial agencies, with the partnering of industry as well.

17. Mr. Verch also gave an overall view of the current situation within the National Action plan and highlighted that there is a prohibition of release of gases, that recovery, reclaiming and recycling is mandatory, that it is mandatory the Environmental Training of A/CR Technicians, and refill and uses for certain applications are banned.

18. Regarding the Phase-Out strategies for CFC's, he mentioned the different prohibitions in different sectors such as mobile air conditioning, mobile refrigeration, domestic appliances, commercial applications and chillers.

19. About the issue of Codes and Standards in Canada, Mr. Verch mentioned that in his country the Canadian ODS regulations include the Federal Halocarbon Regulation (FHR), and Provincial/Territorial *Regulations*. On the other hand, he talked about the Refrigerant Code of Practice, the National Mechanical Refrigeration Code B-52 B-51 and the Trade Standards and mandatory trade licensing of technicians.

20. He highlighted that the Environmental Code of Practice on Refrigerants applies to all CFCs, HCFCs, HFCs and that it makes reference to other legally binding standards. In particular, he spoke about CSA B52 and B51, the Transportation of Dangerous Goods Act and the Workplace Hazardous Material Information System. Mr. Verch further mentioned that all referenced standards and codes are legally binding.

21. Mr. Verch finally spoke about the Federal Halocarbon Regulation wherein it is found the Canadian Environmental Protection Act (CEPA) which in Part 10 addressing Enforcement, it includes penalties ranging from monetary fines and imprisonment. He further explained that the provincial and territorial Regulations include penalties wherein fines and punishment vary from Province to Province and they include monetary, jail terms and the loss of certification.

Tuesday August 29, 2006

Opening

22. The meeting was officially opened at 9:00 a.m. by Dr. Leary Myers, CEO of the National Environment and Planning Agency of Jamaica. Opening statements were made by Mr. Christopher Corbin representing UNEP Caribbean Environment Programme in Jamaica; Mr. Devon Row, Permanent Secretary of the Ministry of Local Government and the Environment of Jamaica; and Mr. Fritz H.A. Pinnock, Executive Director of the Caribbean Maritime Institute of Jamaica.

23. Dr. Myers welcomed the participants noting that the Montreal Protocol is a very successful Multilateral Environment Agreement and that Jamaica is in compliance with the same, highlighting that as from January 1st of 2006 CFC's have been phased out and that the Act for the Preservation of the Ozone Layer will soon be in force.

24. Mr. Corbin also welcomed the participants and thanked the government of Jamaica for hosting the meeting. The UNEP representative mentioned that the objective of the meeting was to equip the National Ozone Officers with the required capacities for implementing the national activities through sharing of lessons and activities among all. He stressed that the Montreal Protocol has evolved to the action that is needed in the ground to achieve compliance, as for example, through the active involvement of the private sector. Mr. Corbin mentioned that even though the region has broadly worked in the implementation of the Protocol by phasing out ODS, there are still challenges such as the management of existing stocks and to timely implement the projects. To that effect, he urged the national officers to take ownership of the projects since they belong to their countries and not to the implementing agencies. Finally, the UNEP representative exhorted the participants to use the lessons learnt in the meeting at home and to continue raising awareness on ozone layer protection.

25. Mr. Row extended a warm welcome to the attendants and pointed out that Jamaica was selected to host the workshop given the significant achievements undertaken in implementing their obligation under the Montreal Protocol and due that they are one of the first countries to completely have phased out the importation of CFC's. In his opinion, Jamaica is strategic for the sharing of lessons learnt and national approaches with other Caribbean countries on the implementation of the Protocol. Mr. Row emphasized that the workshop is a further step towards ensuring that technicians in the air conditioning and refrigeration sectors within the region are fully trained and equipped in the use of ozone-friendly technologies for the phase out of ODS. He also spoke about the different programmes and projects that Jamaica has implemented for assisting the sector to adopt the appropriate technologies. Finally, Mr. Row highlighted the high value of the Ozone Officers Network as a useful mechanism in enhancing the capacity of officers within the region for designing and executing efficient phase-out strategies and wished the participants a fruitful and productive workshop.

26. Mr. Pinnock thanked UNEP for the organization of the workshop and said he was very pleased to be associated to such training. He highlighted that there are four cornerstones to globalization and that CMI is committed to work forward on all the issues. He explained that the Institute provides different Bachelor programmes including International Shipping, Management, and Crew Shipping, and that they are open to any type of cooperation with other transportation agencies in the region.

27. After the opening session, all attendants introduced themselves and Ms. Nicole Walker was appointed as Chairperson of the meeting.

Objectives and expected results of the workshop

28. Ms. Artie Dubrie from UNEP/ROLAC presented to the participants the objectives of the meeting and the expected results from the same, emphasizing the following ones:

- To provide participants with the awareness and skills for addressing and delivering on national mandates and policies for the Montreal Protocol and on alternative ozone friendly technological adaptation through the use of a combination of theoretical and practical/hands-on training modules
- To provide a working and information sharing environment between the National Ozone Officers and technicians for addressing Montreal Protocol issues and mandates, including addressing new and emerging national and regional challenges
- To provide National Ozone Officers (NOO) with the required skills and capacities for the implementation of national programmes for the meeting and sustaining compliance with the Montreal Protocol on the phase out of ozone depleting substances
- To prepare and agree on the 2007 work plan for the Caribbean Network of ozone officers, and

- Upon return to their respective countries, participants will continue to deliver to the wider national community the lessons learnt and proceeding for this meeting.

29. Regarding the results of the workshop, she highlighted that expectations are the nationalization of the results and conclusions towards meeting and sustaining compliance with the Montreal Protocol, and the continuation of networking and exchanges on the use and adaptation of appropriate longer term technologies for Small Islands Developing States.

Montreal Protocol Compliance Mandate, Status of MP ratification and legislation, consumption trend and 2005 compliance status for the region

30. Ms. Artie Dubrie showed a general view of where the countries of the region stand regarding compliance with the Montreal Protocol. Particularly, she explained the phase-out mandates stressing that the bulk of work is found on CFC's. She mentioned that in general the region has complied with the submission of data and that mostly all of the countries have ratified all the Amendment to the Protocol, reason for which she congratulated the representatives of the regions' countries.

31. Regarding consumption, Ms. Dubrie showed graphs for all countries of the Caribbean region highlighting some peaks found in Barbados Methyl Bromide graph due to a golf course development in 2001.

32. From Ms. Dubrie's presentation, several queries and comments arose from the participants.

33. The representative from Trinidad and Tobago expressed the interest of her country in the methyl bromide project and to receive cooperation from Venezuela for phasing-out methyl bromide.

34. The representative from Grenada highlighted the importance of circulating information within the network such as the Singapore supply information so that all members are aware of the problem.

35. Regarding responsibilities from the exporter country, Ms. Dubrie mentioned that their obligation is to report in the data reports all exportations and that they could send an e-mail to the importing country advising about the shipment to which the representative from St. Lucia responded that they cannot only rely on exporter's reports and that they must act together.

Questions Relative to the Cap Evaluation and Workplan for the Second Phase

36. Mr. Cristóbal Vignal, consultant to the Multilateral Fund, gave a presentation about the Terms of Reference for CAP evaluation as well as the methodology to be adopted for carrying out the evaluation with the National Ozone Units representatives. On this regard, he highlighted that there is certain disinformation

within the ozone units about CAP tasks, which include a network component, a compliance assistance component and a clearing house component.

37. Mr. Vignal explained that the Multilateral Fund considers important that the ozone officers provide information on specific problems of their respective countries resulting in non-compliance, as for example, to determine which of the problems hamper compliance; which have actually been addressed by CAP, and by what specific activity; and which of these problems require new measures.

38. Firstly, the Multilateral Fund consultant explained that the evaluation aims to further review and discuss the following:

- the extent to which the objectives of CAP have been realised;
- the assistance requested and received from CAP by Article 5 countries;
- the contribution of the assistance provided by CAP to achieving, maintaining or restoring compliance with the phase-out schedules, data reporting and policy requirements under the Montreal Protocol and its amendments;
- the added value of CAP;
- the relation between the activities funded under CAP and individual projects implemented by UNEP and other agencies; and
- the cooperation and division of labour with other implementing and with bilateral agencies.

39. Finally, Mr. Vignal informed the Ozone Officers that he would arrange bilateral interviews with them within the Workshop frame for evaluating the support received by the countries from CAP for achieving and/or maintaining their compliance situation.

Country experiences, approaches, sources of technologies and challenges for the early phase-out of Annex A, Group 1 CFCs

40. In this point the representatives from St. Kitts and Nevis, Trinidad and Tobago, and Jamaica talked about their countries experiences and the challenges that will be faced in the future in the final ODS phase-out stage.

41. The representative from St. Kitts explained that they had just finished their RMP which included training for trainers, customs training and policy development. She further mentioned that they have not yet started their TPMP which runs from July 2006 to December 2009 and which includes four components: monitoring and evaluation mechanism, establishment of project management duties, training and certification of technicians for developing skills in retrofitting, and provision of equipment and retrofits for demonstration.

42. She also highlighted that within the Recovery and Recycling Programme equipment was provided to technicians and also talked about the situation in June 2006 when they picked a shipment from St. Marteen containing illegal CFC's. Within the foreseen challenges for the future, she underlined the risk of illegal trade of

ODS and the effective control for decreasing the possibilities of illegal entry to the country of such substances.

43. The representative from Trinidad and Tobago started her presentation talking about the country's situation and mentioning that by the end of 2007, all ODS must be phased-out. She expressed that looking at the data, it seems that some of the importers are getting cheaper CFC and completing their quotas. She further explained that since 1999 there is a ban on equipment containing CFC.

44. About the challenges, she believes that R-22 is one of them since in the future they will have to re-train and convince again all stakeholders for phasing-out said ODS. Another challenge she foresees is stocks of contaminated CFC's. She mentioned that under the TPMP they gave this R & R equipment for training of technicians through the association and that assistance is being provided to mini-markets and supermarkets to change to ozone-friendly technologies, being fairly successful. She finally said that the demand of CFC will be managed though the quotas issues.

45. The representative from Jamaica began her presentation mentioning that they had distribution of recovery and recycling equipment under their TPMP, and handle a financial incentive programme. She stressed that they do not have any recovery and recycling centers and that from their experience, it was easy to get alternative gases but the problem was to convince the importers and the technicians to change from ODS to said alternative gases.

46. Regarding illegal trade, she mentioned that they found no illicit entries due that the customs office was very instrumental and did a very good work. About legislation, she mentioned that it includes Ministerial Orders, a Trade Act and the Preservation of the Ozone Layer Act.

Country experiences and lessons learnt in the adaptation to alternative technologies

47. In this session, representatives from Cuba, Venezuela and Canada presented their countries' experiences regarding adaptation of alternative technologies to ODS.

48. The representative from Cuba, Mr. Daniel Perú, spoke about their Management Plan for phasing out CFC in his country, which includes four components: public awareness, training of technicians and customs officers, regulations and strategy for the equipment. He highlighted that all technicians have to obtain the certification for working in any of the country's schools established for this.

49. Regarding regulations, he explained that it comprises the application of a quotas system and licenses for the import of CFC, the conversion of the industry that produced refrigeration equipment with CFC, and the prohibition, three years ago, of the import of refrigeration equipment with CFC. On the strategy for equipment, Mr. Perú stressed that it is addressed to containment, conversion,

substitution and recovery and recycling programmes. He also highlighted that they are currently working with hydrocarbons, which is named LV-12 and that is mostly used in refrigeration. In Mobile Air Conditioning they are experimenting in a small scale with hydrocarbons but they mostly use R-134a.

50. Mr. Perú then presented to the attendants an Access database that they handle for the control of converted equipment which includes a complete record of the conversion as for example, substance used, name of the proprietor, dates, etc.

51. The representative from Venezuela, Mr. Pedro Sallent, began his presentation speaking about the evolution of the CFC consumption in his country and highlighted that this consumption was concentrated in the A/C and Refrigeration service sectors after finishing the conversion projects for the manufacturing sector.

52. He then passed to explain the actions to be taken within the action plan for achieving the 2007 target, which included the remaining consumption in the Manufacturing Sector (done during years 2004-2005); the remaining consumption in the Aerosol Sector (done during year 2004); the consumption in the Refrigeration Service Sector (which is on going) and includes the National Technicians Training Program and the Recovery, Recycling and Reclaim Project; the early close of the Venezuelan CFC production plant; and an incentive program for retrofitting or replacement of CFC refrigeration equipment.

53. Regarding the actual situation of the alternatives, Mr. Sallent explained that when FONDOIN & UNIDO teams prepared the National CFC Phase Out Plan two years ago, they were not sure about the benefit of promoting the use of zeotropic blends through the plan in order to do the conversion in operating equipments which use CFC 12. He expressed that with this in mind, they decided to introduce this subject in the program for the courses and let the market move spontaneously towards the use of other substances, also showing a table with the current substitutes in the market for different ODS.

54. He finally said that the lessons learnt were that there is a variety of replacement refrigerant blends on the market; that technicians do not have skills and knowledge about refrigeration and Air Conditioning, as for example the charging method, fractionation and glide of the temperature, and the existing differences between mineral and synthetic oil; that the implementation of new technologies require training, new skills, tools and new working techniques; and that new and different refrigerant options bring with them new possibilities of new CFC illegal trade.

55. To end his presentation, Mr. Sallent mentioned that others activities in the framework of the National CFC Phase-out Plan implementation is the customs training carried out at different points of the country.

56. The representative from Canada, Mr. Ron Verch, gave a general view of the adaptation of alternative technologies in his country. He began explaining the problems encountered during such adaptation, which included the lack of information, the unwillingness of industry, the high cost and availability of R&R equipment, the high cost of interim replacements, the constant changes in information at manufacturer level, the users' co-operation, the number of alternative options available, and the lack of knowledge at technician level.

57. Regarding the constant change in the information, he highlighted the possibilities to have several possible alternatives and then the decision to change becomes more difficult, also taking into account if it is compatible with mineral oil, if flushings are necessary, etc. About the users' cooperation, he stressed that this plays a big part since a lot of public awareness was needed.

58. As an example of an encountered problem, Mr. Verch explained how manufacturers developed new temperature-pressure charts when new blends went out to the market but they never explained how to use them, causing lack of knowledge within the technicians sector. Finally, he showed a chart comprising the substitutes for CFC and HCFC used in Canada.

59. From the presentations above, several questions were posed by the different participants to the lecturers.

60. Queries were raised regarding the example showed by the Venezuelan representative and also regarding the issue of leaking and quality of the gas when talking about blends, to which Mr. Verch clarified that it is the opinion of the manufacturers.

61. Ms. Dubrie, from UNEP/ROLAC also asked the Venezuelan representatives on labeling requirements for imported gases to which they replied that it is necessary that labeling have a Spanish translation, specially precaution indications, but not the commercial name.

62. Doubts were expressed regarding the actions to be taken towards the control of illicit trade of substances at a national level to which Ms. Dubrie answered that the two most important issues to be addressed by the countries' governments are to have a strong legislation and enforcement of the same, and as for Latin America, to build a network between ozone and customs officers.

Phase-out Approaches from recently approved Terminal Phase-out Management Plans (TPMPs) for Low Volume Consuming Countries (LVCs)

63. Mr. Suresh Raj, from UNEP DTIE Paris, gave a presentation on the subject highlighting that TPMPs are an instrument to assist the LVCs in completing phase-out of CFCs and other ODS and that they are a key mechanism not only to achieve but also to sustain phase out in LVCs.

64. Mr. Raj also explained which were the essential elements for TPMP funding, of which he mentioned the commitment to CFC phase-out schedule, at least consistent with that of Montreal Protocol, with annual reduction steps; the commitment to phase out other ODS consumed in the country; the commitment to annual reporting on implementation; the confirmation of an operating licensing system on ODS imports and exports, a fully functioning National Ozone Unit to manage the implementation; and a clear delineation of the division of responsibility between the lead and cooperating agencies. He further talked about the recently approved TPMPs for Dominica, Grenada and St. Kitts & Nevis.

65. Regarding typical TPMPs and sustainability issues, he stressed that by 2010 the complete phase-out must be achieved and therefore, they include elements for ensuring sustainability of achieved results beyond 2010, the involvement of stakeholders & partners from the private sector, educational institutions, etc., and the interlinking and sequencing of activities.

66. He explained that when preparing these TPMPs, some areas of need were identified and include the Customs officers training and enforcement chain (wherein legislation and more involvement from customs is very important); the refrigeration servicing sector as to have information sharing amongst technicians and access to up-to-date technological information; and establishing ongoing and regular training for refrigeration technicians.

67. In Mr. Raj's opinion, to institutionalize Customs Officers training is very important for sustainability so that new recruits coming into the Customs Office have access to this information and training. He also highlighted the importance of the link between Customs Offices with the World Customs Organization and RILO's Offices.

68. He also made emphasis on the industry associations who are key links not only with national associations but also with international associations, and are able to provide technicians training and to set up a National Refrigeration Association.

69. Mr. Raj finished his presentation talking about the Codes of Good Practices and the benefits and elements of the same, and underlined that such a Code should establish standards for the management & servicing of RAC systems, it must be published and distributed to technicians, it can use successful examples from neighbouring/developed countries, and that the national Refrigeration Association is a key partner to develop and implement the same.

Recent advances and approaches in the Training of Air-conditioning and Refrigerant Technicians and of new refrigerants as listed under ASHARE

70. Mr. Rubén Marchand, consultant from Mexico, began his presentation highlighting that there is a great amount of alternatives and experiences as support to the Montreal Protocol, and that according to the different need of the countries in all refrigeration sectors it is necessary to work as a team. Then he gave a historical summary of the worldwide use of refrigerants.

71. Regarding the alternative technologies for replacing CFC's, he thinks that all are usable according to the needs of the user. In his opinion, it is necessary to evaluate all technical aspects to see which substitutes are applicable, as for example performance tables as well as cost issues. Mr. Marchand transmitted the message about the vital need to reinforce the knowledge of refrigeration technicians with the adequate training for handling new alternatives.

72. Mr. Marchand showed the different refrigerant gases existing in the market along with their brand names, uses and possible replacements. On the other hand, he talked about the Good Practices in Refrigeration and highlighted the importance

of using formats to document the refrigerant's information, and of all the technical data supporting the equipment service.

73. He also spoke about the tools and auxiliary equipment needed for retrofitting and showed pictures and graphs of the same and gave a brief explanation of their use and application. Additionally, he gave some technical advice when the refrigerants are charged in the equipment.

74. He also emphasized in the importance of measuring superheat since the incorrect values for the same could indicate different failures in the equipment such as a clogged filter drier, refrigerant undercharge/overcharge, faulty metering device, or an improper air flow.

75. Regarding cost issues, Mr. Marchand explained that the analysis of the same is very important and he finally concluded that the adoption of alternatives to CFCs depends of several factors that are summarized below:

- Analysis for each end user.
- New technology
- New tools and equipment
- Training and Consulting
- End users can implement projects for phasing out CFC's regarding financial and technical support
- Systems Up grade
- Ecology

Open discussions on the challenges of the Caribbean region in the adaptation of alternative longer term technologies alternatives

76. The discussion was coordinated by Mr. David Godwin from the Environmental Protection Agency (EPA) of United States and began as he posed the question to the participants about how is the proliferation of refrigerant alternatives affecting the implementation of the Montreal Protocol in their countries.

77. The problems expressed by the participants included that it causes problems because users are always calling the ozone office to ask which alternative refrigerant is better for their applications, calls asking if certain refrigerant is legal or not, and problems of such type.

78. The representative of Barbados asked Mr. Godwin if he had good or bad experiences when giving guidelines on alternative substituents to which Mr. Godwin answered that it depends on the application but that 134a is the one mostly used and that in the refrigeration field the ones used are 401, 402 and 409.

79. The representative of Dominica explained that in his country 134a is the mostly used refrigerant and that a lot of blends are coming in from China and that there are concerns regarding health issues on 134a, and asked Mr. Godwin if he is familiar with said issue.

80. Mr. Godwin answered that he had not heard of a legitimate case of health problems due to the use of 134a as refrigerant and that in his opinion, it is as safe as any other refrigerant. Ms. Dubrie complemented the response explaining that 134a is used as propellant as replacement in MDI applications thus being an indication of low toxicity.

81. The representative of Guyana highlighted that there are two classes of toxicity and that it is necessary to take the necessary precautions with all gases. Mr. Verch from Canada underlined that said gas still is a chemical and that it can affect the body.

82. The representative of Barbados stressed that this is a concern among technicians and also about alternatives and that there is no research on health issues as well as in security issues.

83. The representative of Dominica talked about some cans coming from China wherein one of them said 134 and the other one said 134a, to which Mr. Godwin explained that it looked more like a case of counterfeiting. On this regard, Mr. Godwin mentioned that sometimes people is lazy and just use the denomination 134 but highlighted that there are different types so that they must take care on details.

84. Mr. Godwin asked the participants about what other challenges had they encountered regarding the number of alternative refrigerants.

85. The representative of Belize expressed that the training of technicians for such an amount of alternatives will be difficult and that in his opinion, to have a list of preferred refrigerants would be useful.

86. Mr. Bishnu Tulsie, from St. Lucia, called the attention of the participants in view of the future situation of 134a refrigerant since in 2012 emissions of 134a will be taken into account and he exhorted the participants to begin looking for a solution to this situation under the Kyoto Convention. He suggested to chose from the list the best options taking into account particular characteristics, environment and energy issues, and then make it available at national level and maybe then it could raised to a regional level.

87. Mr. Raj (UNEP DTIE) expressed that even though both ozone and climate change issues have to be considered, they have to be further studied to see the activities needed to be done.

88. Ms. Dubrie highlighted that ROLAC has recognized the need to work at a regional level and that the information that has been mostly promoted in the network was currently information about the national refrigeration association. Mr. Godwin complemented her response underlining that this issue could be promoted through the industry associations.

89. The representative from Saint Kitts and Nevis expressed her concern about the costs of 134a in the region due that it is still costly as a replacement, to which the representative from Guyana asked about the reasons why it is still so cheap in the Caribbean.

90. Mr. Verch answered that in his opinion, Mexico still sells cheap R12 to the region and that it is just a cause of supply and demand, and Mr. Godwin added that in the United States there is a similar situation wherein alternatives are still expensive.

91. The representative of Guyana expressed that he believes that hydrocarbons is the better alternative even though he already knows the effects but he considers that it is the best solution for the region. To this statement, Mr. Marchand from Mexico made emphasis in that hydrocarbons have to be of good quality, that they are more costly than refrigerants and that their availability is also important.

92. A technician from Jamaica underlined that people purchase the best offers from cheap refrigerants and in case they make a higher offer, they will not be bought. Mr. Verch confirmed his point and complemented it explaining that even though he agreed with Mr. Marchand regarding hydrocarbons, natural resources are running out and that he thinks that refrigerants will last more than hydrocarbons.

93. Ending the session, Mr. Godwin gave a brief summary of the challenges found in the region, which include: the number of alternatives and the need to reduce such number, the need to train technicians on new services practices on all refrigerants, other educational issues such as health effects, global warming and if there is an overlap with ozone issues, the uncertainty on what future will bring and the costs of refrigerants.

Wednesday August 30, 2006

Implementing the Montreal Protocol: The USA Experience

94. Mr. David Godwin from the USA EPA gave a complete presentation about the USA experience in implementing the Montreal Protocol, making a short introduction about the issue and the public concern about the ozone layer depletion.

95. He spoke about the USA EPA's Stratospheric Protection Program highlighting the history of the USA response to ozone depletion and giving an overview of ODS phase out in his country wherein Class I ODS phase-out is essentially complete and HCFC phase-out is underway. He also explained that USA chose to phase out individual HCFCs according to their ODPs in such manner that R-141b has been phased out and R-22 and R-142b are next.

96. Mr. Godwin also gave a general overview of the ODS consumption in his country after 1996 and then spoke about the activities within the US Program SNAP.

97. He explained that within SNAP program the U.S. Clean Air Act directs EPA to evaluate and list substitutes for ODSs that reduce overall risk to human health and environment, it helps facilitate transition from ODS to alternatives and that said alternatives include chemical replacements, product substitutes and alternative technologies. As way of example of alternative technologies, Mr. Godwin spoke about self-freezing cans.

98. He also highlighted that the EPA reviews substitutes in 8 industrial sectors including Refrigeration and Air Conditioning, Insulating Foam, Solvents and Aerosol Propellants, and Fire Suppression and Explosion Protection sectors, and that since 1994 over 300 substitutes have been reviewed wherein 90% are acceptable and that such substitutes prevent 73,800 ODP tons emissions per year.

99. Regarding Refrigeration and Air Conditioning alternatives, Mr. Godwin then gave the different alternatives used in his country in the sectors of appliances, commercial refrigeration, chillers, unitary air conditioners, industrial and motor vehicle air conditioners.

100. About the motor vehicle air conditioners, he highlighted that there are technical considerations to be taken into account and that even though many hydrocarbon blends are being sold such as OZ-12, HC-12a, Duracool 12a, Enviro-Safe, Red Tek, they are not acceptable under SNAP because no risk assessment has been performed. Mr. Godwin also showed a video containing a demonstration on chemicals safety to demonstrate the statement above.

101. On the other hand, Mr. Godwin spoke of additional Montreal Protocol issues such as Clean Air Act Section 608 regulations, imports of ODS into USA including legal importation for essential uses, transformation or destruction, and previously used ODS, and the current US demand for CFC's. He also talked about illicit trade of ODS and its consequences in both Article 2 and Article 5 countries.

102. He also explained some aspects about the ozone and climate interface and highlighted that ODS and some of the substitutes have significant Global Warming Potentials causing an increase in greenhouse gases due that emissions of ODS substitutes are rapidly increasing.

103. On this point, he explained that there are several ozone/climate partnerships initiatives in his country which include the EPA initiative on a voluntary effort to install, monitor advanced technologies in supermarkets in U.S. to reduce refrigerant emissions, provide objective data on performance and costs, improve energy efficiency, reduce costs, bring more systems to market where beneficial; the partnering with stores, manufacturers, national labs, refrigerant producers, etc.; the providing of research funds, technical evaluation, information sharing and recognition by US EPA; and that results will be shared publicly.

104. Mr. Godwin also talked about the Mobile Air Conditioning Climate Protection Partnership for reducing small can emissions, improving Mobile AC using R-134a, testing low GWP systems including CO₂, R-152a, etc., and having broad international support; and explained the Responsible Appliance Disposal (RAD) Program and the Chiller Replacement Program.

105. He concluded that the opportunities for Article 5 countries are the phase-out of Class I ODS, to protect the current national inventories through managing refrigerants properly, retrofitting carefully, and the training and education, and finally, to move to alternatives such as HCFCs, HFCs, etc., and then leapfrog to best technologies.

Country approaches and challenges for training of technicians in Good Practices of Refrigeration

106. The representative of Trinidad and Tobago talked about the training for technicians which was funded under their TPMP, the manner in which sessions were carried out for such training and the type of demonstrations performed. She also highlighted the effective relationship between the ozone unit and the refrigeration association in her country.

107. The representative of St. Kitts and Nevis explained that not all refrigeration technicians have been trained, that they do not have a refrigeration association and that they do not have a process for certifying the technicians, but that they hope to update their legislation in order to turn said certification to be mandatory as agreed to under the TPMP.

108. The representative from Venezuela gave a presentation about the National Plan for Technicians Training in Good Practices in Refrigeration. He began his presentation highlighting that CFC consumption in Venezuela is concentrated in the refrigeration services sector and that it comprises five stages which are the selection of the training centers, the supply of equipment to such centers, the trainers training, the technicians training and the certification of technicians.

109. He also explained in detail each one of such stages. From their experience, the two main lessons learnt were that the courses of Good Practices in Refrigeration have an important impact in the awareness of the sector service resulting in a reduction in the emission of refrigerant to the atmosphere, and that the courses of Good Practices in Refrigeration are an important help for the small number of courses offered for technicians to upgrade their knowledge in the refrigeration sector, considering the existent transition in the refrigerant market for new alternatives.

110. From the presentations summarized above, discussions were held amongst participants.

111. The technician representative from Jamaica expressed that in his opinion a good approach for the islands is to adopt a plan or the experiences from another country in such manner that they do not reinvent something that someone else has already done.

112. The representative from Grenada highlighted that time is not enough to train the technicians and the representative from Trinidad and Tobago complemented his statement declaring that she also believes that time is short and that they have too much material to learn from but that in her experience, when courses are longer then technicians do not complete them.

113. The representative from Suriname asked the participants if they provided update courses of the training but all the attendants answered that none of them offered updates of the training.

114. The representative of St. Lucia also asked the participants about recovery and recycling activities in their countries to which the representative of Trinidad and

Tobago responded that in her country they were not able to obtain permission to sell their equipment after recycling so they provided the equipment free of charge to certain companies.

115. The representative from Jamaica commented that they sold the equipment at very low cost and that technicians were satisfied with it and that they hope to set up a recovery center though they do not have one currently operating.

116. On this regard, the representative of Grenada highlighted that the problem is that equipment is now obsolete and the technicians do not work too much with it, and that not much has been done at this level in recovery and recycling.

117. The representative of Guyana talked about their experience with the technicians and the initial problems they faced at the beginning for getting the technicians to assist to the trainings and how they solve it with the cooperation of the companies' managers and taking the training into the companies' facilities.

118. After this session, the technicians were taken to the CMI for the Practical Sessions and the Ozone Officers stayed at the Knutsford Hotel installations for continuing with the corresponding sessions.

Addressing Project Implementation: Regional (Caribbean) and National Approaches. Reasons for delays in implementation.

119. Ms. Artie Dubrie, from UNEP/ROLAC made this presentation in the name of Mr. Suresh Raj who temporarily could not attend this session. As an introduction, Ms. Dubrie explained the implementation requirements and the category delays envisaged within the Multilateral Fund plans. She further explained that the main object is to solve the challenges on implementation and agree on mechanisms that would help improve implementation activities and completion.

120. Regarding delays, Ms. Dubrie explained that they could be summarized as Implementing Agency delays, enterprise delays, technical reasons, government delays, and external delays. She then explained in detail the causes for delays at the Implementing Agency level and those due to technical reasons.

121. She highlighted that delays implications for the countries involve the risk of being in non-compliance with MP control measures, that long delayed projects may be recommended for cancellation, the image of the country, that funding for future projects may be compromised and that stricter measures may be applied in the future.

122. On the other hand, Ms. Dubrie also underlined the implications of implementation delays for Implementing Agencies which include that they could cast doubts upon the Agency's ability to manage projects, that the approval for future projects may be compromised, that additional missions to country may be required to resolve issues, staffing/morale issues and that they may force the Agency to collaborate more closely with other partners.

123. Ms. Dubrie spoke about the possible reasons for such delays and summarized that the major challenge for the Caribbean network is the slow rate of disbursement and resulting delays in implementation of MLF approved projects but that this slow rate does not seem to impact statically on maintaining reduction of ODS consumption and compliance as related to Article 7 data reporting.

124. She further said that other possible reasons could be that the MLF implementation agency support service may not be adequate, that there are insufficient buy ins by higher political offices as when the Montreal Protocol activities are not national priorities, and when the Terms of Reference/agreements established between government and Implementing agency(ies) are not monitored and followed or complied.

125. Other reasons mentioned by Ms. Dubrie were when the national ownership is limited, when the Project and the National Ozone Office are too institutionalized, when the National Officer is not adequately skilled to manage projects and do not have sufficiently national support, when the NOO may not be in a sufficiently high decision making position to take charge of process, when there are frequent changes of NOO without adequate handover, and when there is insufficient interest or commitment with the task.

126. Ms. Dubrie then gave a summary of the status of MLF approved projects for the Caribbean Region as of April 2006, including the approved and the disbursed amounts for Institutional Strengthening management.

127. She also showed the IS case study for Caribbean countries where she explained that guidelines for renewal are provided by the MLF, that Institutional Strengthening is considered as a non- investment activity, that the Phase 1 is expected to last three years and that subsequent phases are renewed every 2 years until 2010, and that renewal is allowed to USD 60,000 every two years provided that the country has an ODS licensing System and a full time NOO.

Advantage to Regional and Sub-regional Approaches to Project Implementation

128. Mr. Bishnu Tulsie, from Saint Lucia, gave a presentation demonstrating to the participants the advantages to the regional and sub-regional approaches to project implementation and explained that his presentation would be addressed to three different issues: the project itself, the activities, and the opportunities and threats.

129. Firstly, he highlighted the importance of defining very well the project and gave as example a TPMP project with its characteristics to be considered and different definitions within the project.

130. Mr. Tulsie also spoke about the possible implementation challenges for the region, mentioning the financial resources that in his opinion should not be a problem in the region due to the level of funds, the technical expertise that is limited but opportunities are arising, and the human resource constraints in the

National Ozone Units when there are multiple responsibilities and conflicting priorities.

131. He stressed the opportunities for a regional approach to TPMP execution within which he mentioned the Institutional Strengthening projects, the support of Implementing Agencies and bilateral partners, the activity of the Ozone Officers network, and that several sub-projects or activities lend themselves to common approaches such as the Codes of Good Practice, the Association of Technicians and the illegal trade prevention network.

132. Mr. Tulsie also underlined the importance of regional activities such as common training elements and possibly common training opportunities as well as regional cooperation opportunities, as for example the Regional Halon Bank.

133. He recognized the importance of the experiences of countries in the region that are under their TPMP projects and that can such experiences at a regional level and he also spoke about the possibilities to adopt the St. Georges Declaration of Principles for Environmental Sustainability which allows for certain degree of cooperation, and about the possibilities under CROSO (Caribbean Regional Organization for Standards and Quality) mechanism within CARICOM.

134. He finalized his presentation mentioning the opportunities and threats if a common approach is to be adopted, which included greater levels of collaboration and coordination among countries, that country specific considerations may get lost, and the difficulties in coordinating across CARICOM and the Organization of Eastern Caribbean States (OECS).

135. Afterwards, Mr. Tulsie opened the discussions on issues he presented. He highlighted there is a history of regional projects that have pushed the region in development and that with a regional approach then the countries will do better because there are synergies there.

136. Ms. Dubrie requested Mr. Tulsie to elaborate more on the CROSO mechanism to which he answered that it is a Bureau of Standards that sets regionally quality standards.

137. The representative from Grenada expressed that in his opinion his country is not ready for a regional approach due that it would be limiting local involvement but that he supports a unified approach. In this sense, Ms. Dubrie underlined that it has to be a national driven approach since MLF projects were approved on a national basis and that a sub-regional approach will help improve the projects at a national level.

Monitoring and Reporting Requirements for Terminal Phase Out Managements Plans (TPMPs)

138. Mr. Kasper Koefoed-Hansen from UNDP/Montreal Protocol Unit presented to the participants the different monitoring and reporting requirements for TPMP's and began explaining that UNDP can implement projects under 4 different modalities but that in all countries of the region, excepting one in Haiti, all projects are under

the modality National Execution (NEX) where the national government is held responsible for executing programmes and projects. He highlighted that, however, UNDP helps and assists the country in the implementation of the projects.

139. About monitoring, evaluation and reporting issues, he stressed that new TPMP's have a monitoring component and that this unit is responsible for overseeing the implementation of the project, the documentation of results and for the preparation of annual reports. He also pointed out that good Monitoring and Evaluation is an important management tool that will allow the country to take the necessary decisions during project implementation.

140. Mr. Koefoed-Hansen also explained that the Multilateral Fund Secretariat is increasingly requesting information related to the project activities and gave a few examples including R&R equipment (quantities of R-12 recovered and recycled), number of workshops and participants, local prices of refrigerants (R12, R134-a, etc.), retrofits, budget and expenditures, CFC consumption in different sectors, and number of technicians and workshops in each sub-sector.

141. He also recognized the importance of creating a culture of documenting the results of the execution which will allow the country to be in a better position to take important decisions during project implementation.

142. Mr. Koefoed then passed the floor to the participants for any doubts on his presentation. The representative from Jamaica asked him if these reporting requirements were new to which Mr. Koefoed responded that now the Multilateral Fund is more persisting with the reporting issue.

143. The representative of Saint Lucia asked Mr. Koefoed if the evaluator of the project is UNDP or the country under NEX modality and he answered that the parameter that is being evaluated is the ODS consumption so that if there is no consumption then the project is being well implemented.

Working group to address IS, RMP and TPMP Management including national skills requirement, availability and regional approaches and expected roles of International Implementing Agencies

144. This working group included the representatives from Saint Lucia, Barbados, Saint Vincent and the Grenadines, Suriname, Guyana, and a UNEP representative, and was coordinated by the Ozone Officer of Saint Lucia.

145. The Ozone Officer from Saint Lucia informed that several issues were addressed in the group discussion which in continuation she summarized.

146. She informed that there were staff constraints in three countries due that there were just one person at the Ozone Office or two persons that have several tasks not only limited to ozone issues, and that regarding the staff environment, there are also offices wherein the working environment is poor, for example, small spaces and lack of air conditioning, which leads to a bad space for working.

147. The coordinator of the group also mentioned that some offices have little support from steering committees and that the Refrigeration and Air Conditioning Technicians Association is not yet working and that they are looking forward to a regional approach. She also highlighted that some countries were also requested to submit again consumption data reports due that the Secretariats had not received them which led to extra work.

148. She also mentioned that one ozone officer was moved to another totally different office and that all participants of her group had comments on Implementing Agencies' implementation delays. The coordinator of the group also underlined that there were very short-term contracts for the ozone officers which makes difficult the situation due that they have less benefits and that with every new government usually they have to begin from zero.

149. Ms. Dubrie asked the Coordinator of the Group if any advices were made to the problems raised in the group, for example, regarding the short-term contracts. The representative of Barbados explained this situation under her country's view and said that that was a current situation not only to the ozone office level but that it was happening in all the Ministry office. All the participants agreed in that this is a point of major concern to the ozone officers.

150. Ms. Dubrie reminded the participants that the working group was established to look for solutions to problems common to the group members and that the usefulness of the same is identifying and addressing such solutions.

151. The representative from Saint Lucia explained that a solution that came up regarding audits of projects, was hiring an external auditor but it turned to be too expensive.

152. Regarding possible obstacles with project implementation, Mr. Koefoed from UNDP asked the participants to inform him about any problems with the local UNDP offices so that in such manner he would be able to help them with such issues. The representative from Saint Lucia stressed that the country UNDP office is very busy because they handle too many issues and that in her opinion that is the reason for their problems.

153. Ms. Dubrie asked the participants about their points of view on lack of legislation so that in that manner the Agencies would be able to help them on this regard.

154. The representative from Barbados informed Ms. Dubrie that she had brought the Cabinet paper draft to the Workshop and that she needed some advice on some parts of the document.

155. The representative from Dominica informed that three weeks ago the legislation was submitted to Cabinet approval and that by the end of September they would meet with parliamentarians to speed up the process.

156. On this point, Ms. Dubrie highlighted that four countries of the region are still pending of legislation, which are Barbados, Dominica, Haiti and Guyana. She stressed that TPMP cannot start unless they have established the necessary legislation. In this sense, she asked the participants if country visits could be

helpful to them promote establishment of legislation to which the participants answered that it would certainly help.

Working group to address monitoring, evaluation and reporting mechanism for TPMP implementation including national skills requirement and availability and regional approaches and expected roles of International Implementing Agencies

157. This working group included the representatives from Trinidad and Tobago, Jamaica, St. Kitts and Nevis, Grenada, Dominica, Belize, Antigua & Barbuda, Mr. Kasper Koefoed from UNDP, and Mr. Bishnu Tulsie from Saint Lucia, and was coordinated by the representative of Trinidad and Tobago.

158. From the group discussion, regarding monitoring, she informed that they concluded that it is crucial to have consultants to be attached to the project, that they should be local, with technical background and neutral. They also considered important to have forms for imports and a database of technicians. Regarding monitoring forms, she explained that they recognized that the information captured therein is very important and also is the documentation of the projects.

159. Regarding evaluation, she explained that UNDP evaluates data from the project on the basis of cost effectiveness but that from an evaluation point of view, the main objective is to get consumption to zero so they believe that the evaluation should be along that line. She also stressed that if zero target is achieved earlier, then activities can still be managed within the project, and that the licensing system is very important in achieving the zero imports objective.

160. About reporting, she mentioned the different reports submitted under the TPMP and that any further reporting depends on the Implementing Agency and the National Agency.

161. With respect to the national skills requirements, the Coordinator of the Group expressed that the group considered important that the consultant has technical background, to have trainers for customs, enforcement and technicians, and that for the establishment of Codes of Practice, it is necessary to have an effective association and also the expertise in developing an association. Finally she mentioned that indeed good project management skills are also required.

162. The Coordinator of the Group explained that regarding Regional approaches the group considered necessary to get a CCLEC (Caribbean Customs Law Enforcement Council) agenda for looking at enforcing the national laws from a regional perspective, to form a regional association, and to continue using south-south cooperation and look within the region to improve their skills and expertise.

163. Finally, she stressed that they expect from the Implementing Agencies timely disbursement of funds, technical support and to provide information as required.

164. Ms. Dubrie asked the representative of Jamaica if they had an additional evaluator under their TPMP to which she answered affirmatively. Ms. Dubrie also asked her if they had any monitoring officer for the customs training under their

TPMP and she answered that not formally but that the evaluation officer of the project came to look at illegal trade.

Thursday August 31, 2006

Regional Public Education Awareness Activities, Word Ozone Day Activities 2007, OzonAction Kit, 2007 World Cup Cricket

165. The representative of Trinidad and Tobago addressed the issue of the Ozzy Ozone Booklet and highlighted that she never imagined that what it seemed a small activity required so much work because UNEP has a lot of publication guidelines but she has been informed that it has been approved by UNEP Paris and soon will be forwarded to printing.

166. About the Ozone Day activities for 2006, Ms. Artie Dubrie requested the countries to inform about their planned activities for such celebration.

167. The representative of Antigua & Barbuda informed that they have not yet the specific activities but she thinks that they will offer a working luncheon for technicians in the refrigeration and air conditioning sector.

168. The representative of Barbados also expressed that officially they have not yet the specific activities but that they will probably be the launching of an activity book addressing the ozone protection issue and an important local newspaper will publish an article on this theme.

169. The representative of Belize informed that they will be promoting a primary school competition on the ozone protection issue and they have planned a training for teachers on this subject. During the week, he also mentioned that mass communication media will be used to aware about the International Ozone Day celebration.

170. The representative of Dominica underlined that the country will be launching an education campaign in primary schools and a number of secondary schools were selected for addressing the ozone issue and to discuss it with them in a forum.

171. The representative of Grenada highlighted that they have not yet the official activities but that they were foreseeing the launching of the technicians association which was finally delayed and then cancelled off. However, he informed that among the activities for celebrating the ozone day, they will have an exhibition on ozone-friendly technologies as well as workshops on elementary and secondary schools in which the issue of ozone protection will be discussed with the students. He also mentioned that there will be media disclosure of the different activities and asked Ms. Dubrie if it was possible to look at the video material he brought which will be broadcasted in his country to which Ms. Dubrie responded that he could show it at the end of the session.

172. The representative of Saint Kitts and Nevis informed that the Ozone Story booklet will be distributed in the major local newspapers on the 15th of September and that the Minister of Environment will give a speech on the ozone layer protection issue.

173. The representative of Saint Lucia gave a presentation about the development and launching of the Ozone website in her country explaining that they used ESTIS (Environmentally Sound Technologies Information Systems) to develop the website. She also highlighted that ESTIS is an IS management tool to assist the transfer of ESTs, that UNEP DTIE (Paris) gave permission to use ESTIS and that this service is available to all NOUs. She then showed the structure of the website and mentioned that it was going to be launched as part of the Ozone Day celebrations.

174. Other activities mentioned by the Ozone Officer for the celebration were T-shirts that have been stamped with an ozone protection message for distribution, that the Minister of Environment will give a speech on the subject wherein the press will be present and there will be press releases and distribution of publications during that day. Finally, she spoke about a RMP demonstration for technicians.

175. The representative of Guyana explained that the first activity for the Ozone Day celebration will take place in the Botanic Gardens to which schools, technicians, government officials and customs officials have been invited. They will give few speeches on the ozone protection issue and will launch a competition. They will also have publications releases but she highlighted that they are a little bit skeptical on the outcome of the celebration due to the high tension elections.

176. The representative of Trinidad and Tobago gave a presentation about the different activities that were going to be carried out for the Ozone Day celebration and also showed the collaboration brought by the NOU to the Tourism Park 2006.

177. She began her presentation explaining that EMA plans to mark this year's observance of World Ozone Day with a host of activities geared not only to the general public, but also specifically toward certain target audiences.

178. She highlighted that the groups identified to be targeted for specific activities include Refrigeration & Air conditioning technicians, new home owners/ first time buyers, air conditioning and refrigeration retail stores, vehicle owners, housewives, procurement officers, secondary and primary school kids, tertiary level students, supermarkets and general consumers.

179. She informed that the activities include brochures for technicians, for banks and lending institutions, mid morning talk shows in radio & television, a half-day seminar for procurement officers, lectures at primary and secondary school environment clubs, distribution of Ozzy Ozone jigsaw puzzles, consumer tips in newspapers, a World Ozone day supplement, displays at several places and universities, the inclusion of Ozone Material in syllabus at UTT and a poster competition.

180. About the Tourism Park, she underlined that the NOU collaborated with the Annual Tourism Park (August 18-27 2006) hosted by TIDCO to start the celebration of the International Ozone Day, and given that Ozone Depletion affects Tourism, the World Ozone Day Display was mounted at the Tourism Park.

181. The representative of Suriname informed that they have decentralized all ozone activities but that during the month of July they invited primary schools to an exhibition and that they will have press media releases for the ozone day celebration.

182. Mr. Suresh Raj from UNEP/Paris expressed his satisfaction about all the awareness activities that are being carried out in the region and congratulated the participants in such sense.

183. Ms. Dubrie addressed the issue of the regional calendar that was discussed in the Saint Vincent Meeting highlighting that in her opinion it could be left for year 2008 because there is not enough time to obtain all the painting competition results by the end of 2006. On this regard, the representative of Trinidad and Tobago pointed out that results would have to be submitted before the end of 2006 because at the end of the year all printers have a lot of work printing calendars for the next year.

184. The representative of Saint Vincent and the Grenadines informed that the Minister of Environment will give a speech and an exhibition on the ozone protection issue will be carried out in several places. She also explained that the Ozzy Ozone video will be displayed during the whole week and diffusion will also be made through an article in the newspaper. On the other hand, she also highlighted that the group 'Environment Attackers' will work with the National Ozone Unit at schools and that they are also producing an environment syllabus for primary schools.

185. The representative of Jamaica pointed out that they were going to have low- or free-of-cost activities because their budget is low. She informed that there will be diffusion of the thematic through an article in the major local newspapers as well as a speech from the Minister of Environment. She also explained that a number of radio stations will hold interviews with specialists in the ozone protection issue and that there will also be presentations at the schools during the week and displays at the University of Technology.

186. After the countries' presentations, the representatives of Antigua & Barbuda and from Grenada showed the videos produced in their countries for awareness campaigns to be broadcasted on television.

187. Mr. Suresh Raj talked to the participants about the new OzonAction Education Pack that was delivered to each Ozone Unit worldwide as he also congratulated Barbados and the region for the character of Ozzy Ozone. He also talked about the letter send by Mr. Rajendra Shende addressing the Ozone Day celebrations and wished to all a very happy Ozone Day.

188. The representative of Dominica made a recommendation to all participants in the sense that each country should develop and keep specific activities on public awareness. He explained that at the end of October at the Music Festival and are planning to give 15 second shots after a band plays on a large screen for raising awareness on the ozone issue.

189. Regarding the Cricket World Cup 2007, Ms. Artie Dubrie explained that they were already late to entry on a partnership with the World Cup so in her opinion, another option would be to keep it at a national level.

190. Mr. Raj supported Ms. Dubrie's comment and requested them to keep it with the national cricket associations. In this sense, Mr. Bishnu Tulsie reminded the

participants that a high number of countries will be coming to the World Cup so that it will be possible to make some awareness activities.

191. The participants then discussed on how to involve ozone protection with the cricket world cup. In this sense, the representative of Barbados recommended contacting the committees to ask for advice. She explained that they are promoting sunscreen, clothes, protection from UV radiation, since so much people are going to the beach.

192. Ms. Artie Dubrie congratulated the representatives from all the participant countries for the ownership of the public awareness activities.

193. After a consensus, all participants informed that they have some material from previous contests so in their opinion, they would prefer to make the regional calendar for 2007. Ms. Dubrie asked the countries with facilities to provide information on printing services in those countries and quotations through the e-forum.

Recent Decisions and discussion on Open Ended Working Group (OEWG) of the Meeting of the Parties

194. The Ozone Officer of Jamaica spoke about the last OEWG that took place in Montreal last July and summarized the main discussions held in such meeting.

195. She began talking about the Halons Technical Options Committee highlighting that some Article 5 Parties were having problems with the transition away from halons and with the contamination of halon stocks with CFCs or other materials.

196. She also explained that the Methyl Bromide Technical Options Committee discussed three factors that were putting continued progress at risk: first, critical-use exemptions in some countries were creating a competitive disadvantage for some alternatives and for Article 5 producers that had already phased out methyl bromide consumption; second, the promotion of methyl bromide was continuing; and third, the global over-supply of methyl bromide was leading to falling prices and increased use in some Article 5 Parties. She informed that also the Quarantine and Pre-shipment uses were addressed, including ISPM 15 incidence.

197. Regarding the Refrigeration, Air Conditioning and Heat-pump Technical Options Committee, she expressed that although phase-out in the manufacturing of new refrigeration and air-conditioning equipment was almost complete in Article 5 Parties, CFCs continued to be used for servicing and that HFCs continued to be the main alternative in most of the sectors covered by the Committee.

198. She informed that decision XVII/17 which requested TEAP to prepare terms of reference for the conduct of case studies on the technology and costs associated with a process for replacing CFC-containing refrigeration and air conditioning equipment, including environmentally sound recovery, transport and final disposal of such equipment and of the associated CFCs, was considered in the meeting.

199. The Ozone Officer expressed that the Government of Canada also submitted a proposal called for a ban on CFC production in non-Article 5 Parties to meet the domestic needs of Article 5 Parties, to be effective from 1 January 2008, two years earlier than the phase-out deadline provided for under the Montreal Protocol.

200. However, she underlined that the proposal was refused due that an early ban on CFC production in non-Article 5 Parties might have a negative effect on industry in Article 5 Parties, as reducing supply in the absence of alternatives might simply lead to higher prices but not reductions in consumption. She also explained that the Government of Canada accepted to amend such proposal.

201. She finally spoke about the proposal put forward by the representative of Canada which addressed key questions on the future of the Montreal Protocol and informed that Parties were invited to submit to the Secretariat by 12 October 2006 any issues or questions on the Canadian proposal, which the Secretariat would compile for consideration by the Eighteenth Meeting of the Parties.

Recent Decisions and discussions on the 49th Montreal Protocol Executive Committee and on the 36th Implementation Committee of the Montreal Protocol

202. Mr. Suresh Raj from UNEP/Paris gave a presentation to show the participants the main issues discussed in such meeting. He began explaining that normally the second meeting in the year is focused on monitoring and evaluation issues.

203. He informed that forty decisions were issued and then proceeded to summarize the main ones. Regarding the 2006 business plan, he showed that the Multilateral Fund has yet 40 million USD to allocate for phase-out activities in Article 5 countries and is looking for innovative ideas for allocating such funds. Mr. Raj requested the National Ozone Officers to submit suggestions on this regard.

204. Regarding compliance, he highlighted that the majority of developing countries, including all members of the Caribbean network, appeared to be well-positioned to comply with the timetable for ODS phase out set by the MP. He congratulated the participants for their efforts in complying with their compromises.

205. On the Implementation Committee, Mr. Raj underlined that five countries of the Caribbean had compliance issues: Antigua & Barbuda were still pending of 2005 ODS consumption data reports, for Barbados and Haiti the ODS licensing system is outstanding, for Dominica a clarification was required on the proposed CFC plan of action and for Guyana the ODS licensing system is also outstanding.

206. In such sense, Mr. Raj mentioned that in order to obtain the required legislation in countries where it is still missing, high level missions could be of help for obtaining compromises from the high level government officers. He gave an example of success in Albania with such type of missions.

207. Ms. Dubrie complemented his comments informing the participants that Antigua & Barbuda has submitted the 2005 data, for Barbados there is a legislation draft in work, that Dominica is responding to the last letter submitting the

correction and that for Guyana there is already a draft but elections are too recent. In such sense, Ms. Dubrie asked the representative of Guyana if a high level visits could help speeding up the approval to which she answered affirmatively.

Status of the Caribbean delegations in the deliberations of the Group of Latin America and the Caribbean (GRULAC)

208. The discussion was coordinated by the representative of Suriname who began highlighting that in a first instance they should look at their consumption data because looking at the outputs of the Caribbean countries, they are not being reflected globally. He asked the participants on how to improve their participation in GRULAC to move forward.

209. The representative of Trinidad and Tobago expressed her concern regarding the language in which GRULAC meetings are being carried out, which is Spanish difficulting it to them to adequately participate. Mr. Tulsie explained the participants that they can ask in such meetings for translation of the discussions.

210. The representative of St. Kitts and Nevis stressed that the Chair of GRULAC changes but that for ExCom the Caribbean never gets a seat resulting in a very difficult participation. She proposed the participants to act as a whole in Meeting of the Parties, for example. On this regard, the representative of St. Lucia supported the idea and complemented it explaining that in her opinion the region needs to be less silent and to participate more.

211. Mr. Tulsie explained to the participants the way how those Meetings work regarding the participation of the Parties as far as South and Central American countries concern.

212. The representative of Trinidad and Tobago suggested that when attending to the Meetings, they should form a group and agree on issues, choosing a leader to place the idea of the region. The representative of Jamaica backed her colleague's comment and further suggested to carefully scrutinize the agenda, decide among them and lead a group idea.

213. The representative of Suriname explained that they could study the draft agenda at the main meetings of the network. On this respect, the representative of St. Kitts and Nevis stressed that there was too much space in between meetings and that a meeting of such type should take place about two weeks before the Meeting of the Parties.

214. Mr. Raj pointed out that sometimes countries have side meetings with the Ozone Secretariat at the Meeting of the Parties and that they could consider such possibility also.

215. The representative of Trinidad and Tobago stressed the importance of attending the Meetings for achieving these objectives. Mr. Raj confirmed this assertion and exhorted the participants to be more active on the Meetings.

216. Ms. Dubrie highlighted that Latin-American countries are different from the Caribbean countries and that in such sense, they have different consumptions and issues to discuss and agree on.

217. The representative of Suriname took the lead and will be coordinating the increase of involvement participation of the Caribbean region in GRULAC and the Caribbean Small Islands Developing States (SIDS).

218. Mr. Raj expressed that there could be exchange between Networks and to continue the south-south cooperation.

Addressing 2007 compliance mandate of the Montreal Protocol for Annex A, Group 1 CFCs

219. The representative of Dominica was in charge of the group discussion and asked the participants to speak about the national activities they have undertaken to comply with their obligations under the Montreal Protocol.

220. The representative of Barbados explained that the biggest activity in her country has been the fast track on legislation and that as soon as it is established, they will proceed with the customs and technicians trainings. She also underlined that they want to do more on public awareness and to fast track the phase out if possible.

221. The representative of Suriname expressed that they have engaged with the Ministry of Trade to establish a quota system and that they have also being talking with importers about this system.

222. He highlighted that in his opinion, they need to increase awareness of technicians and that it would be helpful to increase awareness of shipping agencies as well. He informed that the on-going activity is the customs training and that he would like to decentralize the trainings.

223. The representative of Belize pointed out that they have been carrying out activities in legislation enforcement as well as for a certification system. He expressed that they have carried out visits to monitor MoU's of technicians and that they have provided technical assistance to the refrigeration sector and equipment for the Air Conditioning sector. He stressed that one of the activities they will promote is to strengthen the cooperation with the Customs agency.

224. The representative of Saint Vincent and the Grenadines highlighted that they already have established legislation but that they had a problem with the ratification due to a correspondence loss. She also informed that they have started an association for technicians training and that will set a retrofit center under their TPMP.

225. The representative of Saint Kitts and Nevis explained that they are currently working to monitor importers and that they are also promoting alternatives to CFCs for technicians.

226. The representative of Saint Lucia highlighted that their license system is working fine and that it is the most representative activity regarding CFC's phase out compliance.

227. The representative of Trinidad and Tobago explained that they have continued doing the good work that they have been doing for the past years and that their license system is also working well.

228. She explained that they have been working on awareness activities but that they have a concern regarding the customs area when they reach the zero level imports. She stressed that their strategy will be to decrease completely the demand due that if there is no demand then there will be no imports at all.

229. The representative of Grenada described that the current key areas they are working on are the license system, the retrofit programme of ODS equipment and public awareness.

230. The representative of Antigua and Barbuda informed that they are still trying to meet the established goals but that the license system is working well and that the activities in public awareness have been fruitful.

231. The representative of Jamaica highlighted that they have already reached phase out of ODS and that their activities are addressed to maintain compliance. She stressed that the Ozone Layer Act has been their major achievement.

232. The representative of Dominica emphasized that they do not expect any more imports and that they expect to begin the TPMP very soon. He underlined the different awareness activities they have been carrying out in schools and the private sector as well as the customs training that has taken place. He also pointed out that they expect to have ready the legislation by September.

233. The representative of Guyana informed that until they get the legislation established they will continue monitoring of imports and that importers began to stockpile because of the low prices given to them. She highlighted that they are having problems with second hand equipment entering the country and specified that it is mostly from relatives abroad.

234. Mr. Tulsie is of the opinion that some producers are selling below production cost. He highlighted that EIA could investigate this issue because it may be a case of illegal trade. Further, he reminded the participants that TPMP's are for reducing consumption to zero and that it is time that countries start thinking in zero consumption and to think in hotspots. In his opinion, Jamaica's legislation is a good example to follow.

235. The representative of Saint Lucia expressed her concern about the CAP activities after 2010 and about illegal trade which is going to be increasing at that time.

236. In response the comment from the representative of Saint Lucia, Mr. Raj informed her that there will be a time extension to finish on-going projects after 2010.

Identification of main issues to be addressed at next Meeting (2007)

237. Ms. Artie Dubrie from UNEP/ROLAC reminded the participants that the next Network Meeting will be held in Saint Lucia in April 2007. She highlighted that the main issues to be addressed at such Meeting will be customs, legislation and trade; free zones; customs offices capacities in relation with neighborhoods; software used for controlling ODS trade like the one developed by Mexico; compliance; project management; public awareness; and enforcement of Caribbean countries on GRULAC.

238. The representative of Dominica underlined that ODS destruction should be an issue to be addressed at the next meeting. The representative of Jamaica backed his suggestion and recommended to look at the Terms of Reference on this issue.

239. Ms. Dubrie asked the participants to review the Decision of MOP on this issued to begin studying it. On this regard, the representatives of Dominica and Saint Lucia will coordinate the activity of looking for solutions on ODS destruction facilities with particular orientation for very Low Consumption Countries such as the Caribbean region.

Friday September 1st, 2006

Discussion Summary of the issues and highlights arising from the Technicians' training

240. Mr. Ruben Marchand from Mexico presented the pros and cons of using hydrocarbons as alternatives to CFC's that were discussed in the technicians' training.

241. As pros, he mentioned the following: cost, environmental friendly, oil compatibility (most oils), systems components (no mechanical components change required), good performance, no phase out in the future, and good experience results.

242. On the other hand, he listed the cons which include flammability, limited use capacity, electrical modification requirements, the perception of fear, and the original equipment manufacturer (OEM) Warranty.

243. Mr. Marchand also made remarks regarding availability, HC's service, additional training, retrofit cost, reinforcing good practices, HC's purity and safety. The representative of Cuba commented that hydrocarbons are not the only solution but for their country, it was the right one.

244. The representative of Antigua & Barbuda agreed with Mr. Ruben Marchand in that is the countries who must decide on the feasible alternatives for them but notwithstanding this, he is concerned about safety. On this regard, the

representative of Barbados stressed that technicians have to be sensitized on safety issues.

245. The representative of Dominica expressed that though HC is a good alternative, his country is not ready for it due to handling and safety of the same.

246. The representative from Belize suggested making a workshop on working with HC with total education in which the priority will be education on safety. The representative of Cuba pointed out that more time is needed for this type of training because three days are not enough.

247. The representative of Grenada said he was impressed with the results of the retrofitting in HC but that regarding the hands-on training, he thinks it is needed about two days to carry it on with the required safety.

248. The representative of Saint Vincent and the Grenadines expressed it was very positive to try to implement something new in the region and that it is good to know that they are options available.

249. The representative of Suriname pointed out that the use of HC would be good to decrease energy consumption but that rules have to be established for safety and handling. The representative of Trinidad and Tobago also supported this opinion.

250. Mr. Bishnu Tulsie reminded the attendants that the decision to chose an alternative to CFC's must be left to a national level, for example, through associations.

251. On this regard, the representative of Venezuela highlighted that the training was a good experience and that HC are good as long as governments rule on safety and technical training.

252. Mr. David Godwin from the EPA/USA expressed that instead of looking if a substance is a good or bad refrigerant, the technicians must look at the application itself, for example, refrigerators.

253. Ms. Artie Dubrie ended the session exhorting the participants to address these issues through the Network and thanked Jamaica representatives because they provided the necessary space to share their experiences.

Creating a Sustainable Environment through Multilateral Environmental Agreements: Lessons from the Implementation of the Montreal Protocol in Jamaica, Barbados and Trinidad & Tobago

254. Ms. Ruth Potopsingh from the Petroleum Cooperation of Jamaica gave a detailed view about sustainable environment, explaining first the current situation of the environmental issues at local and global levels and highlighting that not many Multilateral Environmental Agreements have a Fund parallel to the Protocol.

255. Ms. Potopsingh explained how the sustainable environment model works and the definition of the same. She then spoke about the Montreal Protocol, its

objectives and the impacts of ozone depletion, and about the implementation status of the Protocol in Barbados, Jamaica and Trinidad & Tobago.

256. Regarding Jamaica, she highlighted that the National Ozone Unit and the National Ozone Commission have been very important factors for success in the implementation of the Protocol in the country.

257. Ms. Potopsingh pointed out that in the case of Trinidad and Tobago the Country Programme served as blue print to guide local compliance, and that it is very important the formation by area and in capacity building.

258. About Barbados, she explained that they had a very good commencement but then there had a lapse due to institutional capacity.

259. Regarding the slow legislative processes, she informed the audience that it was a phenomenon not only happening in the Caribbean but that it was worldwide. Ms. Potopsingh explained the MEAs implementation success factors and that for creating a sustainable environment, succession planning is key and can be achieved through development planning. She showed statistics graphs of the three countries and the challenges in each one of them.

260. Finally, she ended her presentation concluding that within the lessons from the implementation of the Montreal Protocol in the Caribbean she could summarize that:

- policy coherence is necessary to facilitate effective MEA implementation,
- that capacity development at the personal and organizational levels promotes effective implementation,
- that in the future trade issues will be an even stronger reason for environmental treaty accession,
- that successful treaty implementation is linked to its structure, and
- that the environmental issue of a treaty may not be sufficient for ensuring successful implementation.

261. Ms. Potopsingh also made emphasis in that use of model legislation can help to speed up the process of establishing legislation, that stakeholder support is key to successful outcomes and impacts, that environmental sustainability can be fostered through capacity building, environmental education, stakeholder participation and other built -in interventions within the MEA structure, and that training of private sector technicians from the refrigeration and air-conditioning industry is and has proven effective way to facilitate compliance of the treaty.

262. Mr. Suresh Raj from UNEP/Paris expressed his good impressions about the capacity building that has been done throughout the region and congratulated the countries' representatives in this regard.

Implications of the Caribbean Single Market and Economy on the Movement of Skills and Services

263. Ms. Angella Taylor Spence, from the Planning Institute of Jamaica, gave a presentation on the CSME, highlighting first that the Caribbean Single Market has been implemented but the Economy not yet.

264. Ms. Taylor Spence spoke about the role of CARICOM under the CSME and explained that the objectives of the CSME are employment within the region; the achievement of higher levels of competitiveness; improved standards of living and work; accelerated coordinated and sustained economic development; and increased leverage and effectiveness in negotiating with other States or regions.

265. About the CSME main features Ms. Taylor Spence mentioned that contribution of services is now greater and then it is very important in trade, further to goods.

266. For such reason, she explained that the benefits from the trade in services include that CARICOM-owned companies will have the right to establish and operate businesses in any CARICOM member-state under the same terms and conditions as local companies, and that CARICOM service providers will be able to offer their services throughout the region without work permits, usually on a temporary basis, as consultants.

267. Regarding the opportunities that CSME could provide, she highlighted that the region cannot think in isolation but in a wider economy and that even if people are specialized and economy is expanding, there are more opportunities for such specialized people.

268. In such sense, Ms. Taylor Spence pointed out that quality service is of utmost importance for competing with other regions or countries. In her opinion, opportunities will be a reality through preparedness as businesses and individuals need to be prepared through education, training and accreditation.

269. Ms. Taylor Spence underlined that for taking advantage of such opportunities it is imperative for goods producing entities to focus on research and development as to ensure compliance with standards and professional certification; and for small businesses, they must form strategic alliances as to increase inflows of new capital, entrepreneurship and innovation.

270. She spoke particularly about the opportunities for employment growth in Jamaica and made emphasis in different sectors such as tourism, information and communication technology, construction and installation, sports and entertainment, mining, and cultural industries.

271. Ms. Taylor Spence finished her lecture highlighting that similar economic developments are occurring in other CARICOM territories such as Barbados, Trinidad & Tobago and Grenada, that opportunities are being multiplied and that the region must be armed with knowledge and information.

272. Mr. Bishnu Tulsie asked Ms. Taylor Spence about the national codes of good practice and how did they set monitoring standards on movements of such services

to which she answered that most countries are signatories to bigger standardization bodies, such as ISO, but that anyway CROSO is the result of such concern and that it is the standardization body created to such purpose.

273. Ms. Artie Dubrie asked the lecturer about the forms in which the informal sector could be addressed and Ms. Taylor Spence explained that the best manner would be to look for ways to formalize the sector which, at a national level, could be done through the associations seeking to pull the informal operators into the formal sector. She recommended addressing this issue first at a national level before going into a regional process.

274. The representative of Trinidad and Tobago recommended encouraging the national associations before turning into a regional association. In such sense, he also highlighted that the region must be a top player in standardization because before going into the market, such standards must be adopted regionally and that a Caribbean association should get together to address services and standardizations issues.

275. The representative of Barbados explained that some countries have to start from zero to start an association and the representative from Trinidad and Tobago explained that in their case, the existence of legislation helped them getting all technicians certified, so in his opinion, there lies the importance of the regional association due that all technicians to be transferred by services could use the association if they are part of it.

276. The representative of Antigua and Barbuda described the association in his country and highlighted that though it is not mandatory, it all has been done by voluntary commitment of the technicians. He believes that a regional association would benefit all the countries of the region. Ms. Artie Dubrie suggested that the representative of Barbados lead an e-forum for addressing this issue.

277. The representative of Guyana stressed that in his country public awareness was needed for advising technicians on training and that such issues of common concern could be addressed at regional level by an association.

Canada experience on Air Conditioning and Refrigerants Association (HRAI)

278. Mr. Ron Verch, from Canada, explained in his presentation the structure of the HRAI and highlighted that it has national presence since 1968 and currently approximately 1295 members.

279. He showed the different services for the members of the association, which include technical training and certification courses, assistance for manufactures with trade opportunities in foreign markets (HRAI Export directory), tracking of monthly shipment of HVACR products and provides statistics to members, lobbies on behalf of industry in matters relating to government policies affecting the HVACR industry, and negotiated discounts for members for different services such as insurances, transaction fees and leasing programs, the Peer Exchange Program, the Retail

Financing Program, the Marketplace Distinction Program, financial assistance for individuals undergoing trade training and a Technical Support Help Line.

280. Mr. Verch also talked about their biggest accomplishment, Refrigerant Management Canada (RMC), which is an Extended Producer Responsibility Organization established by the Heating Refrigeration and Air Conditioning Institute of Canada (HRAI) and the Canadian industry to destroy ODS refrigerants (CFCs, HCFCs, and HCFC blends) in an environmentally responsible manner.

281. He highlighted that the program is an industry-led partnership consisting of manufacturers, importers, reclaimers, contractors, special interest groups and government.

282. Mr. Verch explained that when the Canadian government committed to the reduction and ultimate elimination of ODS challenged the industries to develop environmental solutions to reduce the amount of substances released into the atmosphere, HRAI and the Canadian industry responded to the challenge by developing RMC.

283. For closing his lecture, Mr. Verch pointed out that the program is funded by a voluntary environmental levy remitted by refrigerant manufacturers, importers and reclaimers on the sales of HCFC refrigerants, and that all CFC, HCFC and HCFC blends will be accepted into the program for destruction and no fee is charged. He also emphasized that RMC will not accept hydrocarbons, ammonia, methyl chloride or sulfur dioxide refrigerants.

Review of the lessons learnt and plan of action for the adaptation of longer term alternative technologies in the Air Conditioning and Refrigerants Sectors for the Caribbean Region

284. All representatives gave their recommendations regarding the technicians' workshop and thanked the organizers for this meeting.

285. The majority agreed that there is the need for the formation of a Regional Air Conditioning and Refrigeration Association but that firstly, each country has to establish a national association. UNEP was asked to assist in the formalization and establishment of this Air Conditioning and Refrigeration Association.

286. They also agreed in the need of regulation and certification of technicians and that training has to be a continued process for this sector.

287. Finally, they all highlighted that safety and safety standards are principal in the selection, adaptation and use of alternative technologies.

288. Mr. Bishnu Tulsie reminded the participants that if they are talking about adaptation of already existing technologies, there is dependence in such case. He believes that given that it is not possible to retrofit everything, there must exist alternatives in a long term basis. He also emphasized that it is optional to the countries to adopt or not any technology available.

289. Mr. Suresh Raj expressed that UNEP's perspective may be in the future to come to some kind of key list to address alternatives' issues. On this regard, Mr. Tulsie suggested that UNEP together with MLF or any bilateral cooperation agency could financially assist in the establishment of the refrigeration technicians association.

290. After the different comments of the participants Ms. Dubrie presented the Conclusions for the workshop, which were accepted by the participants after being amended according to the suggestions made from the audience.

Summary observations/conclusions by the Multilateral Fund Secretariat on the Montreal Protocol Compliance Assistance Programme (CAP) Evaluation

291. Mr. Cristobal Vignal, consultant to the Multilateral Fund, presented some of the preliminary results he had obtained from the bilateral interviews he had with the Ozone Officers of the region.

292. Mr. Vignal expressed that from such interviews some of the views gathered by him are that the network is a success even if it is a young network, that there is concern on repetitions in the meeting's agendas, that for the Ozone Officers monothematic meetings would be better in such manner that they could concentrate more in one issue and that CAP is good but not all countries fully understand the role of CAP, and that there is good participation from the network members.

Closing

293. The Workshop was officially closed on Friday September 1st 2006 at 5 p.m., giving to each one of the participants the Certificate of Participation to the Montreal Protocol, Regional Workshop on Alternative Technologies for the Air-conditioning and Refrigeration Sector and Preparatory Meeting of the English Speaking Caribbean Ozone Officers.

⌘ ⌘ ⌘ ⌘

IV. Conclusions and Recommendations

1. In the selection of alternative refrigerants, considerations have to be given to costs, availability, health and safety, national policies and applications. Safety and safety standards are principal issues in the selection, adaptation and use of alternative technologies to ODS.
2. There is a need for a Caribbean regional policy for alternative technologies including refrigerants, which would include for example, environment and safety performance characteristics as well as standardization and mobility of services.
3. Participants agreed to have a Regional Air Conditioning and Refrigeration Association. Each country has to establish first a national association. This national association will then be part of this proposed regional association.
4. The "Regional Association" can be a lobby body to government for issues including standardization and services, establishment and enforcement of Code of Good Practice.
5. Financial and technical assistance was requested for the establishment of the Regional Association and in such sense, UNEP was asked to assist in the organization of such Association.
6. All service technicians need to be regulated and certified, and training has to be a continued process for this sector.
7. Countries are encouraged as early as possible to establish ODS licensing systems to allow the continued approval of MLF projects and compliance with the Montreal Protocol.
8. UNEP is to coordinate high level missions to encourage and fast track the establishment of legislation and other national policies required by Montreal Protocol implementation and compliance.
9. Parties were encouraged to address the national issues affecting project implementation delays, and it was stated that Implementation Agencies are available to assist on this regard. Further investigation is necessary for identifying sub-regional approaches to Project Management.
10. UNEP/ROLAC will continue in dialogue with US EPA for investigating the customs enforcement capacities in the external (non-independent) territories of this region and in particular, import/export trade in ODS and ODS-containing technologies.

11. UNEP/ROLAC will also consult with US EPA on trade policies for export of ODS-dependant technologies, for example refrigerators, to this region.
12. Countries were sensitized on the issue of starting to think about the development of national policies and mechanisms for management of CFC zero-consumption.
13. Participants requested guidance from UNEP CAP on projected support services and compliance support after January 1st 2010.
14. UNEP was requested to provide guidance on ODS destruction facilities with particular orientation for very Low Consumption Countries such as the Caribbean region. This activity will be coordinated by the NOOs of Dominica and Saint Lucia.
15. The NOO of Suriname will be coordinating the increase of involvement participation of the Caribbean region in GRULAC and the Caribbean Small Islands Developing States (SIDS).
16. The region has the necessary skills and capacities to support neighboring countries requiring assistance for Montreal Protocol matters. UNEP/ROLAC was requested to continue supporting south-south cooperation, using as first choice Caribbean resources.
17. On public education and awareness, the 2006 activity will be the Ozzy Ozone Booklet. The 2007 activity will be the regional calendar and 2007 Cricket World Cup at a national level. The deadline for the Ozone Officers to submit material for the regional calendar is September 30, 2006. Activities for 2008 will be agreed at the next Main Meeting of the Network. Countries were advised to include housewives and procurement officers as stakeholders in public education and awareness activities.
18. The 2007 Main Meeting of the Network Officers will include the issues of customs, enforcement and trade control in ODS in this region.
19. All countries presented that they will be able to meet the 2007, 85% reduction in CFC consumption as mandated by the Montreal Protocol.
20. This Network has consistently maintained compliance with its commitments under the Montreal Protocol. However, the issues of completion of ratification of amendments to the Protocol and establishment of ODS license systems are still to be addressed.

V. Annexes

a. Agenda

**Montreal Protocol, Regional Workshop on Alternative Technologies for the Air- Conditioning and Refrigeration Sector
and**

**Preparatory Meeting of the English Speaking Caribbean Ozone Officers
August 28 to September 1st, 2006, Kingston, Jamaica**

**Organized by the United Nations Environment Programme,
Regional Office for Latin America and the Caribbean (UNEP/ROLAC)
In collaboration with the Government of Jamaica and the Caribbean Maritime Institute**

Day 1: Monday, August 28th, 2006

Only for Air/conditioning and Refrigerant Technicians

08:30 - 08:45	Opening remarks by: Jamaica National Ozone Office, The Caribbean Maritime Institute, and UNEP/ROLAC
08:45 - 09:00	Introduction of Technicians, Objectives of the Workshop: UNEP/ROLAC
09:00 – 9.45.	Theory, Review of Basic Principles of Refrigeration, Operational use of Specialty Tools for Air Conditioning and Refrigerants: Mr. Horace Nelson, JAMAICA University of Technology
9.45 – 10.30	Recent advances and approaches in the Training of Air-conditioning and Refrigerant Technicians and of new refrigerants as listed under ASHARE Mr. Ruben Marchand Ortega, MEXICO
10:30 - 11:00	Refrigerants commonly used in Air-conditioning and Refrigerants in the Region including sources BARBADOS and Antigua/Barbuda
11:00 - 11:15	Coffee Break

11:15 - 12:15	Theory: Safe Handling and Management of Refrigerants: CUBA
12:30 - 13:00	Lunch
13:00 - 14:00	Implication of the Occupation, Safety and Health Act for the Air-Conditioning and Refrigeration Sectors: MR. ROBERT NUNEZ, Trinidad & Tobago
14:00 - 15:00	Approaches to establishment and enforcement of Air Conditioning and Refrigeration Codes and Standards: Canada and USA experience
15:00 - 16:00	Discussions of Day 1 presentation: Coordinated by Mr. Ron Verch, Heating, Refrigeration and Air-conditioning Institute of Canada
16:00 - 16:15	Closure of Day 1

Day 2: Tuesday, August 29th, 2006.

Joint Meeting between the National Ozone Officers and Technicians

08.00 - 09.00	Registration of participants
09:00 - 09:30	Opening of the Meeting by: <ul style="list-style-type: none"> • GOVERNMENT OF JAMAICA • UNEP, Caribbean Environment Programme • Caribbean Maritime Institute • CHAIR, NATIONAL OZONE OFFICER OF JAMAICA • MEDIA BRIEFING
09:30 - 10:00	Coffee Break
10:00 - 10:30	Welcome: <ul style="list-style-type: none"> • CHAIR PERSON: NATIONAL OZONE OFFICER (NOO) JAMAICA • SELECTION OF RAPORTEURS • INTRODUCTION OF PARTICIPANTS

10:30 - 11:00	Objectives and Excepted results of this Workshop on Alternative Refrigerants: UNEP/ROLAC
11:00 -11:30	Montreal Protocol Compliance Mandate, Consumption Trend and Compliance Status 2005 for the Caribbean Region: UNEP/ROLAC
11:30 -12:30	Country experiences, approaches, sources of technologies and challenges for the early Phase Out of Annex A , Group 1 CFCs: including the use of Recovery and Recycling Equipment: NOOs OF THE BAHAMAS, JAMAICA AND TRINIDAD & TOBAGO
12:30 -13:00	Phase Out approaches from recently approved Terminal Phase Out Management Plans for Low Volume Consuming Countries: UNEP/PARIS
13:00 -14:00	Lunch
14:00 - 15:30	Country experiences and lessons learnt in the adaptation to alternative technologies: <ul style="list-style-type: none"> ➤ JAMAICA ➤ CUBA ➤ VENEZUELA ➤ HAITI ➤ CANADA
15:30 - 16:00	Canada experience on Air Conditioning and Refrigerants Association (HARI): Mr. Ron Verch, Heating, Refrigeration and Air-conditioning Institute of Canada
16:00 – 17:00	Open discussions on the establishment and approaches for the management of Regional (Caribbean) Code of Good Practices, Certification of Technicians and Air Conditioning and Refrigerant Association: Coordinated by: SURINAME NOO
17:00 - 17:30	Open discussions on the Challenges of the Caribbean Region in the adaptation of alternative longer term technologies alternatives: Coordinated by: Mr. David S. Godwin, P.E., Environmental Engineer, U.S. Environmental Protection Agency, Office of Air and Radiation, Office of Atmospheric Programs, Stratospheric Protection Division Alternatives and Emissions Reduction Branch

17:30 - 17:45	Closure of Day 2 Joint Meeting with UNDP, Dominica, Grenada, St. Kitts/Nevis and St. Vincent and the Grenadines
19.00 to 21.00	Cocktail reception hosted by the Government of Jamaica

Day 3: Wednesday, August 30th, 2006**Joint Morning Session with National Ozone Officers**

After First Morning Session the workshop will be separated for Technicians and National Ozone Officers

08:30 - 10:00	United States of America Significant New Alternatives Policy (SNAP): Mr. David S. Godwin, P.E. Environmental Engineer U.S. Environmental Protection Agency, Office of Air and Radiation Office of Atmospheric Programs Stratospheric Protection Division Alternatives and Emissions Reduction Branch	
10:00 - 10:30	Country Approaches and Challenges for Training of Technicians in Good Practices of Refrigeration: Organization, deliverance, review, audit and certification TRINIDAD & TOBAGO, ST. KITTS & NEVIS, VENEZUELA	
10:30 - 10:45	Coffee Break (Separating NOOs and Technicians in two working groups) NOO to continue as separate group	Technicians (only) to transfer to the CMI for Practical Sessions

	ONLY FOR NOOS	ONLY for TECHNICIANS
10:45 - 11:00	Addressing Project Implementation: Regional (Caribbean) and National Approaches. Reasons for delays in implementation: UNEP/ROLAC and UNEP/PARIS	Drop in replacements Theory: CANADA, VENEZUELA
11:00- 11.30	Advantages to regional and sub/regional approaches to Project Implementation: Mr. Bishnu Tulsie, St. Lucia	
11.30-12.00	Monitoring and reporting requirements for RMPs and TPMPs: UNDP	
12:00 -12:30	Establishment of Working Groups to address: <ul style="list-style-type: none"> • IS, RMP and TPMP Management including, national skills requirement, availability and regional approaches and expected roles of International Implementing Agencies • Monitoring, evaluation and reporting mechanism for TPMP implementation including, national skills requirement and availability and regional approaches and expected roles of International Implementing Agencies 	Hydro Carbons Refrigerants Safe Handling and Performance CUBA & JAMAICA
12:30 - 13:30	Lunch	
13:30 - 14:30	Presentations and discussions by Working Groups	Practical operation of passive and active recovery devices
14:30 - 15:30	Development of mechanisms to address delays in projects implementation in the Caribbean Region	Joint brazing and leak detection
15:30 - 17:00	Joint Meeting with UNDP, Dominica, Grenada, St. Kitts/Nevis and St. Vincent and the Grenadines	

Day 4: Thursday, August 31, 2006

Separated working sessions for NOOs and Technicians

	National Ozone Officers	Technicians
08:30 - 09:00	Questions and Answers from Day 3	Questions and Answers from Day 3
09:00 - 10:00	Regional Public Education Awareness Activities, World Ozone Day Activities 2007, OzonAction Kit, 2007 world cup cricket: UNEP/ROLAC St. Lucia National Ozone Website: NOO St. Lucia	Practical exercise (Hands on) conversion of an existing system to a non-ODS refrigerant: JAMAICA, CUBA
10:00 - 10:45	Coffee Break	
10:45 - 12:00	Recent Decisions and discussions on: <ul style="list-style-type: none"> • Open Ended Working Group of the Meeting of Parties: NOO OF JAMAICA • 49th Montreal Protocol Executive Committee: UNEP/PARIS • 36th Implementation Committee of the Montreal Protocol: UNEP/PARIS 	Continuation of Practical Exercises
12:00 - 13:00	Status of the Caribbean Delegations in the deliberations of the Group of Latin America and the Caribbean (GRULAC): SURINAME	
13:00 - 14:00	Lunch	Lunch
14:00 - 14:30	Addressing 2007 compliance mandate of the Montreal Protocol for Annex A, Group 1 CFCs: Coordinated by: DOMINICA	Continuation of Practical Exercise

	NOO	
14:30 - 15:00	Identification of main issues to be addressed at next Meeting (2007): UNEP	<i>Field Visit to University of the West Indies, Mona Campus to Observe HC Conversion Project</i>
15:00 - 17:00	Joint Meeting with UNDP, Dominica, Grenada, St. Kitts/Nevis and St. Vincent and the Grenadines	

Day 5: Friday, September 1st 2006

Joint Sessions for National Ozone Officers and Technicians

09:00 - 10:00	Discussion Summary of the issues and highlights arising from the Technicians' training, Jamaica
10:00 – 10:30	Creating a Sustainable Environment Through Multilateral Agreements- Lessons learnt from the implementation of the Montreal Protocol in Jamaica, Barbados and Trinidad and Tobago, Ruth Potopsingh, Petroleum Cooperation of Jamaica.
10:30 - 10:45	Coffee Break
10:45 - 11:30	Impact of the Caribbean Single Market Expert (CSME) on the Movement of Skills and Services within the Region', Angela Taylor Spence, Planning Institute of Jamaica.
11:30 - 12:00	Proposal on the establishment of a Regional Code of Good Practice, Certification of Technicians and a Regional Air-conditioning and Refrigerants Association, in the context of the Caribbean Single Market: CSME Expert
12:00 - 12:30	In the context of the Caribbean Single Market, Working Groups for the establishment of a Long Term Management for: <ul style="list-style-type: none"> 1. Regional Code for Good Practices, Coordinator: TRINIDAD & TOBAGO 2. Certification of Technicians, Coordinator: BAHAMAS 3. Regional Air-conditioning Refrigerants Association, Coordinator: JAMAICA

12:30 - 13:30	Lunch
13:30 - 14:30	Presentation and discussions of each Working Group in the context of the Caribbean Single Market Expert (CSME) for the establishment, management and enforcement of a Regional Code of Good Practice and Regional Air-conditioning and Refrigeration Association
14:30 - 15:30	Review of the lessons learnt and plan of action for the adaptation of longer term alternative technologies in the Air Conditioning and Refrigerants Sectors for the Caribbean Region, Coordinator: UNEP
15:30 - 16:00	Conclusions and vote of thanks ,

⌘ ⌘ ⌘ ⌘

b. List of Participants

ANTIGUA AND BARBUDA

NAME Randolph Aska
 TITLE Refrigeration Technician
 ORGANISATION Refrigeration/ air Conditioning Association
 COUNTRY Antigua/Barbuda
 ADDRESS Villa AREA
 TELEPHONE/FAX 461-3633/461-2975
 E-MAIL Abraca_1@hotmail.com

NAME Charmaine Hackett
 TITLE National Ozone Unit
 ORGANISATION ODS Unit Trade
 COUNTRY Antigua/Barbuda
 ADDRESS St. John's, Antigua & Barbuda
 TELEPHONE/FAX 1 268 562 1609/1 268 462 1625
 E-MAIL odsunit@candw.ag

BARBADOS

NAME Emma Beckles
 TITLE Assistant NOO
 ORGANISATION The Ministry of Energy and the Environment
 COUNTRY Barbados
 ADDRESS Environment Unit, SP Musson Building, 1st Floor Hincks Street, Bridgetown
 TELEPHONE/FAX (246) 467-5700/5706 Fax: (246) 437-8859
 E-MAIL williamsem@gob.bb or emmaw55@hotmail.com
 CELL PHONE 246-262-9380

NAME Shaina Goodridge
 TITLE Environmental Technician
 ORGANISATION Environmental Protection Department
 COUNTRY Barbados
 ADDRESS Jemmott's Lane, St. Michael, Barbados
 TELEPHONE/FAX 436-4820/228-7103
 E-MAIL envevg@caribsurf.com
 CELL PHONE (246) 248-8904

NAME Grantley N Parris
 TITLE Engineering Manager
 ORGANISATION Pine Hill Dairy
 COUNTRY Barbados
 ADDRESS Pine Hill, St. Michael BB 14000
 TELEPHONE/FAX 246-430-4100/246-429-3514 fax
 E-MAIL Pari_1@sunbeach.net or gparris@banksholdings.com.bb
 CELL PHONE 246-233-7775/246-230-2283

NAME Anthony P. Smith
 TITLE Technician
 ORGANISATION AIRCOM
 COUNTRY Barbados
 ADDRESS 745 Kingsland Gardens, Chrich Church
 TELEPHONE/FAX 746-4260546
 E-MAIL aircom@caribsurf.com
 CELL PHONE 232-7389

BELIZE

NAME Jorge Franco
 TITLE National Ozone Officer
 ORGANISATION Department of the Environment
 COUNTRY Belize
 ADDRESS 10/12 Ambergris Avenue, Belmopan City, Belize
 TELEPHONE/FAX (501) 822-2816/ 822-2862
 E-MAIL noubelize@btl.net or jorgefranco44@yahoo.com
 CELL PHONE (501)668-1946

NAME Rene Allen
 TITLE Instructor Ref/AC Technology
 ORGANISATION Institute of Tech./Voc. Education and Training
 COUNTRY Belize
 ADDRESS 3692 University Heights
 TELEPHONE/FAX (501) 223-0318
 E-MAIL Reneallen34@hotmail.com
 CELL PHONE 600-3174

NAME Anthony Bell
 TITLE Technician
 ORGANISATION Anthony Bell Air Conditioning and Refrigeration Service
 COUNTRY Belize
 ADDRESS 52 Victoria St., Belize City, Belize
 TELEPHONE/FAX 223-5573
 E-MAIL cuddybell@hotmail.com
 CELL PHONE 614-6755

CANADA

NAME Ron Verch
 TITLE Consultant
 ORGANISATION British Columbia Institute of Technology
 COUNTRY Canada
 ADDRESS 5730 Tyson Road, Chillwack B.C.
 TELEPHONE/FAX 604-858-7314
 E-MAIL rrverch@shaw.ca or ron_verch@bcit.ca

CUBA

NAME Daniel Perú Rivera
 TITLE Master Engineer
 ORGANISATION Cuban Ozone Unit
 COUNTRY Cuba
 ADDRESS: 20 y 18 A, Miramar, Playa
 TELEPHONE/FAX (537) 202-5543/(537) 204-4041
 E-MAIL peru@ama.cu

NAME Rafael Quintero Ricardo
 TITLE MSc Mechanical Engineer
 ORGANISATION Universidad de Oriente
 COUNTRY Cuba
 ADDRESS Patricio Lumumba s/n, Santiago de Cuba
 TELEPHONE/FAX 5322-635233
 E-MAIL quintero@cer.uo.edu.cu

NAME Reinaldo Guillen Gordin
 TITLE MSc Mechanical Engineer
 ORGANISATION Universidad de Oriente
 COUNTRY Cuba
 ADDRESS P. Lumumba s/n, Santiago de Cuba
 TELEPHONE/FAX 5322/535233
 E-MAIL guillen@cer.uo.edu.cu

DOMINICA

NAME Collin Gusite
 TITLE Ozone Officer
 ORGANISATION Environmental Coordinating Unit
 COUNTRY Dominica
 ADDRESS Dame M.E. Charles Boulevard, Roseau Fisheries Complex, Roseau
 TELEPHONE/FAX 767-448-4577 or 767-448-4577
 E-MAIL agriext@cwdom.dm
 OTHER DETAILS 767-275-6546

NAME Earl Williams
 TITLE Lecturer/Technician
 ORGANISATION Dominican Association of Refrigeration A/C Technicians
 COUNTRY Dominica
 ADDRESS 6 Church Street, Roseau, Commonwealth of Dominica
 TELEPHONE/FAX (1-767) 448-5698/ (1-767) 449-0153 (Home)
 E-MAIL nighdywill@cwdom.dm
 CELL PHONE (1-767) 235-3334

GRENADA

NAME Leslie Smith
 TITLE National Ozone Officer
 ORGANISATION NOU Ministry of Agriculture, Agriculture, Lands, Forestry,
 Fisheries, Energy and MNIB
 COUNTRY Grenada
 ADDRESS Ministerial Complex, Botanical Gardens, Tanteen, St. George's,
 Grenada
 TELEPHONE/FAX 473-440-2708
 E-MAIL smithl@spiceisle.com
 CELL PHONE 473-409-8128

NAME Joseph Mitchell
 TITLE Refrigeration and Air Conditioning Technician
 ORGANISATION Industry/Jonas Browne and Hubbards Ltd
 COUNTRY Grenada
 ADDRESS Confer, St. George, c/o Springs Post Office
 TELEPHONE/FAX 473-443-3822
 E-MAIL Mjmitchell402@hotmail.com
 CELL PHONE 473-406-0121

GUYANA

NAME Nicole Piggot
 TITLE Senior Metereological Technician Hydromet
 ORGANISATION Ministry of Agricultura
 COUNTRY Guyana
 ADDRESS 18 Brickdam, Stabroek
 TELEPHONE/FAX (592) 226-0341/227-2463
 E-MAIL nicole.piggot@guyana.net.gy

NAME Patrick Chinedu Onwuzirike
 TITLE Specialist AC/R – Principal
 ORGANISATION Government Technical Institute
 COUNTRY Guyana
 ADDRESS 23 Railway Avenue, Triumph E.C.D.
 TELEPHONE/FAX (592) 227-1197
 E-MAIL chinrac@yahoo.com
 CELL PHONE (592) 611-1146

JAMAICA

NAME	Nicol Walter
TITLE	Environmental Officer
ORGANISATION	National Environment and Planning Agency
COUNTRY	Jamaica
ADDRESS	10 & 11 Caledonia Avenue
TELEPHONE/FAX	754 7540/754 7599/94
E-MAIL	nwalker@nepa.gov.jm
NAME	Ruth Potopsingh
TITLE	Deputy Group Manager Director
ORGANISATION	Petroleum Corporation of Jamaica
COUNTRY	Jamaica
ADDRESS	36 Trafalgar Road, Kingston 10
TELEPHONE/FAX	(876) 929-9006 Fax: 929-9007
E-MAIL	Ruth.potopsingh@pcj.com
CELL PHONE	819-2182
NAME	Richard Mc Callum
TITLE	Refrigeration Technician
ORGANISATION	Couples Negril
COUNTRY	Jamaica
ADDRESS	5 Seaton Crescent Sav-La-Mar, Westmoreland
TELEPHONE/FAX	957-5960 (work)
E-MAIL	pitta404@hotmail.com
CELL PHONE	382-2856
NAME	Michael A.C. Heron
TITLE	Air conditioning Sales Manager
ORGANISATION	AREL LTD
COUNTRY	Jamaica
ADDRESS	535 Iris Drive, Eltham View, Spanish Town
TELEPHONE/FAX	926-3340/3 (Work) Fax: 926-3346
E-MAIL	macheron@cwjamaica.com
CELL PHONE	843-4751, 999-3831
NAME	Wendy Burton-Nicholson
TITLE	A/C Technician HVAC
ORGANISATION	JDF, Jamaica Defense Force
COUNTRY	Jamaica
ADDRESS	Lot 140 Stadium Gardens, 18 Beverly Close Kgn 5
TELEPHONE/FAX	754-2413 (876)
E-MAIL	Stsweets2@hotmail.com
CELL PHONE	384-7939 (876)

NAME Lancelot Malcolm
TITLE Operations Manager/ A/C Technician
ORGANISATION T and T Auto Cooler LTD
COUNTRY Jamaica
ADDRESS 8 Ripon Road Kingston 5
TELEPHONE/FAX 960-5986/7 Fax: 960-5988
CELL PHONE 844-8339

NAME Christopher Hoyes
TITLE Refrigerant Technician
ORGANISATION University of Technology
COUNTRY Jamaica
ADDRESS 40 Coleyville Ave., Kingston 20, Jamaica
TELEPHONE/FAX 702-4053
E-MAIL cwahoyses@yahoo.com
CELL PHONE 845-8735

NAME Errol Edwards
TITLE Refrigeration Technician
ORGANISATION Harbour Cold Store
COUNTRY Jamaica
ADDRESS 2 Clovelly Road, Kingston C.S.O.
TELEPHONE/FAX 967-3300
CELL PHONE 393-1141

NAME Phillip Smith
TITLE Refrigeration A/C Technician (Group Tech)
ORGANISATION Sandals Resort Int.
COUNTRY Jamaica
ADDRESS 5 Kent Ave. Mo. Bay, Jamaica
TELEPHONE/FAX 979-9130 (Work) (my No.) 810-9644 or 387-6213
CELL PHONE 810-9644 or 387-6213

MEXICO

NAME Ruben Marchand
TITLE Consultant
ORGANISATION IPN-Mexico
COUNTRY Mexico
ADDRESS Rancho San Isidro No. 50, Campestre Coyoacan, Mexico
TELEPHONE/FAX (52)55 5679-3117/5678-0294
E-MAIL marchand@prodigy.net.mx
CELL PHONE 55 5409/5205

ST. KITTS & NEVIS

NAME June Hughes
 TITLE Conservation Officer (National Ozone Officer)
 ORGANISATION Department of Physical Planning and Environment
 COUNTRY St. Kitts and Nevis
 ADDRESS P.O. Box 597, Bladen Commercial Development, Basseterre
 TELEPHONE/FAX (1-869) 465-2277, (1869) 465-2521 Ext. 1055 Fax: (1-869) 465-5842
 E-MAIL ccodoe@sisterisles.kn or junelavon@yahoo.com
 CELL PHONE (1869) 669-4906 or 763-1205

NAME Cheryl Jeffers
 TITLE Assistant Physical Planning Officer (Assistant Ozone Officer)
 ORGANISATION Department of Physical Planning and Environment
 COUNTRY St. Kitts
 ADDRESS Bladen Commercial Development, Basseterre
 TELEPHONE/FAX 1-869-465-2277, 1-869-465-2521 Ext. 1097 Fax: 1-869-465-5842
 E-MAIL phypkskb@sisterisles.kn or speechless_che@yahoo.com
 CELL PHONE 1-869-663-9736

SAINT LUCIA

NAME Donnalyn Charles
 TITLE Ozone Officer
 ORGANISATION Sustainable Development and Environment Section, Ministry of Physical Development, Environment Ministry
 COUNTRY Saint Lucia
 ADDRESS 1st Floor, Price Waterhouse Coopers Bldg, Pointe Seraphine, Castries, Saint Lucia
 TELEPHONE/FAX (1-758) 451-8746 or 453-1062 Fax: 758-453-0781
 E-MAIL doncharles@planning.gov.lc or dingdingtoo@gmail.com
 CELL PHONE 758-487-8385

NAME Bishnu Tulsie
 TITLE Director
 ORGANISATION Saint Lucia National Trust
 COUNTRY Saint Lucia
 ADDRESS Piggion Island National Landmark, P.O. Box 595, Castries, Saint Lucia
 TELEPHONE/FAX (758) 452-5005, Fax: (758) 453-2791
 E-MAIL director@slunatrust.org or btulsie@candw.lc
 CELL PHONE (758) 720-3463

NAME	Michael Harte
TITLE	HVACIR/Electrician
ORGANISATION	Tropical Cooling LTD
COUNTRY	St. Lucia
ADDRESS	P.O. Box RP2344
TELEPHONE/FAX	(758) 4452-0344
E-MAIL	Hartemichael@hotmail.com
CELL PHONE	(758) 285-3776

SAINT VINCENT & THE GRENADINES

NAME	Janeel Miller
TITLE	National Ozone Officer
ORGANISATION	Ministry of Health and the Environment
COUNTRY	St. Vincent and the Grenadines
ADDRESS	Ministerial building, Kingstown, St. Vincent
TELEPHONE/FAX	784-485-6992
E-MAIL	svgenv@vincysurf.com or hotlava106@hotmail.com
CELL PHONE	784-454-6719

NAME	Gary Peters
TITLE	Lecturer/Technician
ORGANISATION	St. Vincent Technical College
COUNTRY	St. Vincent and the Grenadines
ADDRESS	Belmont
TELEPHONE/FAX	784 458-5704/784 485-6947/
E-MAIL	garyptas@hotmail.com
CELL PHONE	(784) 593-2642

SURINAME

NAME	Cedric Nelom
TITLE	NOO Suriname
ORGANISATION	NIMOS
COUNTRY	Suriname
ADDRESS	Onafhankelijkheidsplein 2, Paramaribo, Suriname
TELEPHONE/FAX	(597) 52-0045 Fax: (597) 52-0042
E-MAIL	cnelom@nimos.org
CELL/PHONE	(597) 8686-088

NAME	Ruben Ravenberg
TITLE	Electrical and HVACR Engineer
ORGANISATION	Surinam American Industries Limited
COUNTRY	Suriname
ADDRESS	Hebiweriestraat 22, Paramaribo, P.O. Box 12194
TELEPHONE/FAX	(011) 597-47-4014 or (011) 597-483424
E-MAIL	Rub_rav@yahoo.com
CELL PHONE	(011)597-8868104

TRINIDAD & TOBAGO

NAME Marissa Gowrie
 TITLE National Ozone Officer
 ORGANISATION Environmental Management Authority
 COUNTRY Trinidad and Tobago
 ADDRESS 8 Elizabeth Street, St. Clair, Port of Spain, Trinidad and Tobago
 TELEPHONE/FAX (868)628-8042 Fax: (868) 628-9122
 E-MAIL mgowrie@ema.co.tt
 OTHER DETAILS 868-352-1452

NAME Robert Nunez
 TITLE President of ARIA of T and T
 ORGANISATION ARIA
 COUNTRY Trinidad and Tobago
 ADDRESS 5 Picton Street Newtown, Port of Spain, Trinidad and Tobago
 TELEPHONE/FAX (1-868)622-1381 or 628-2811 (F)
 E-MAIL Rn.arctic@carib-link.net
 CELL PHONE (1-868) 680-1339

NAME Maurice Mc Barnette
 TITLE Technician
 ORGANISATION Air Cond. And Refrigerant Industry Association (ARIA)
 COUNTRY Trinidad
 ADDRESS 42 Carlton Ave., St. James, Port of Spain, Trinidad and Tobago
 TELEPHONE/FAX 622-3315
 E-MAIL aria@carib-link.net
 CELL PHONE 371-5734

VENEZUELA

NAME Gian Franco Ruggiero
 TITLE Mechanical Engineer, Technical Adviser
 ORGANISATION FONDOIN, Ozone Unit of Venezuela
 COUNTRY Venezuela
 ADDRESS Av. Libertador, Centro Comercial Los Cedros. Piso 5, La Florida, Caracas, Venezuela
 TELEPHONE/FAX 58-212-731-3932
 E-MAIL gruggiero@fondoin.org
 CELL PHONE 58-412-717-7711

NAME Pedro Jose Sallent
 TITLE Mechanical Engineer, Technical Adviser
 ORGANISATION FONDOIN, Ozone Unit of Venezuela
 COUNTRY Venezuela
 ADDRESS Av. Libertador, Centro Comercial Los Cedros. Piso 5, La Florida, Caracas, Venezuela
 TELEPHONE/FAX 58-212-731-3932/731-2992
 E-MAIL psallent@fondoin.org
 CELL PHONE 58/414/239/6428

US EPA

NAME Dave Godwin
TITLE Environmental Engineer
ORGANISATION U.S. Environmental Protection Agency
COUNTRY U.S.A.
ADDRESS 1200 Pennsylvania Avenue, NW (6205J), Washington, D.C.,
20460
TELEPHONE/FAX (1-202) 343-9324/(1-202) 343-2363
E-MAIL Godwin.dave@epa.gov

UNDP

NAME Kasper Koefoed-Hansen
TITLE Regional Coordinator
ORGANISATION UNDP
COUNTRY Panama
ADDRESS
TELEPHONE/FAX (507) 302-4573
E-MAIL Kasper.koefoed@undp.org
CELL PHONE (507) 6672-8528

UNMFS

NAME Cristobal Vignal
TITLE Consultant
ORGANISATION UNMFS
COUNTRY Canada
ADDRESS 722 Victoria Westmount, Canada H3Y251
TELEPHONE/FAX 514-482-1205
E-MAIL xtobl@videotron.ca
CELL PHONE 514-347-1040

UNEP

NAME Suresh Raj
TITLE Capacity Building Manager, Energy and OzonAction Branch
ORGANISATION UNEP/PARIS
COUNTRY France
ADDRESS Tour Mirabeau 39-43 quai André Citroën 75739 Paris Cedex 15,
France
TELEPHONE/FAX (33-1)4437-7611 Fax: (33-1) 4437-1474
E-MAIL Suresh.raj@unep.fr

NAME Christopher Corbin
TITLE Caribbean Environment Programme Officer
ORGANISATION UNEP
COUNTRY Jamaica
ADDRESS 14-20 Port Royal Street, Kingston, Jamaica
TELEPHONE/FAX (876) 922-9267-9/ Fax: (876) 922-9292
E-MAIL cjc.uneprcuja@cwjamaica.com

NAME Artie Dubrie
TITLE Policy and Enforcement Officer, OzonAction Programme
ORGANISATION UNEP/ROLAC
COUNTRY México
ADDRESS Blvd. de los Virreyes 155, Mexico City, Mexico
TELEPHONE/FAX (5255)52495086 Fax: (5255) 52020950
E-MAIL Artie.dubrie@pnuma.org

NAME Alejandra Moreno
TITLE Consultant
ORGANISATION UNEP/ROLAC
COUNTRY México
ADDRESS Blvd. de los Virreyes 155, Mexico City, Mexico
TELEPHONE/FAX (5255)52495000 Fax: (5255) 52020950
E-MAIL Alejandra.moreno@pnuma.org

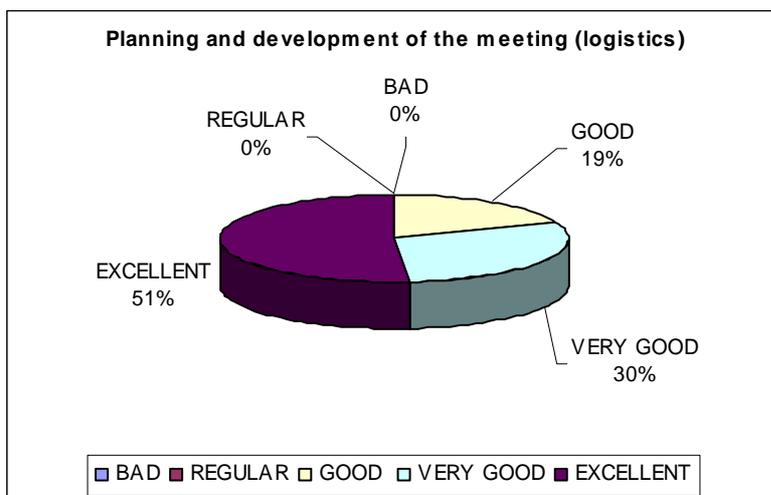
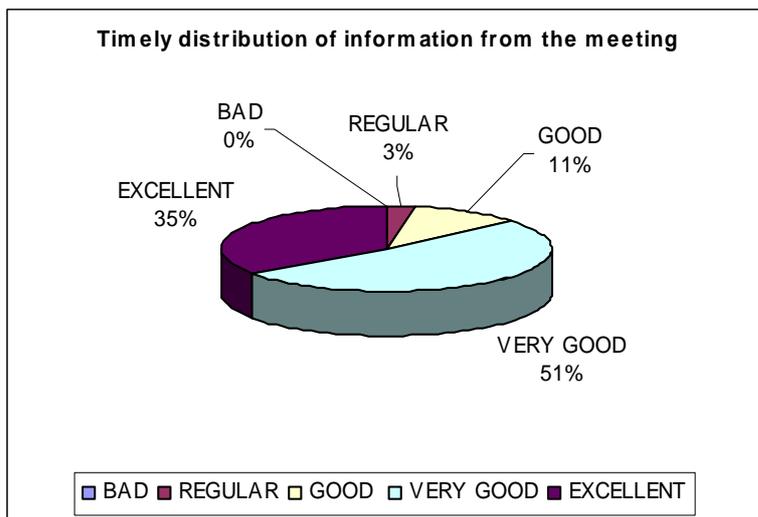
NAME Martha Rincón
TITLE Consultant
ORGANISATION UNEP/ROLAC
COUNTRY México
ADDRESS Blvd. de los Virreyes 155, Mexico City, Mexico
TELEPHONE/FAX (5255)52495082 Fax: (5255) 52020950
E-MAIL Martha.rincon@pnuma.org

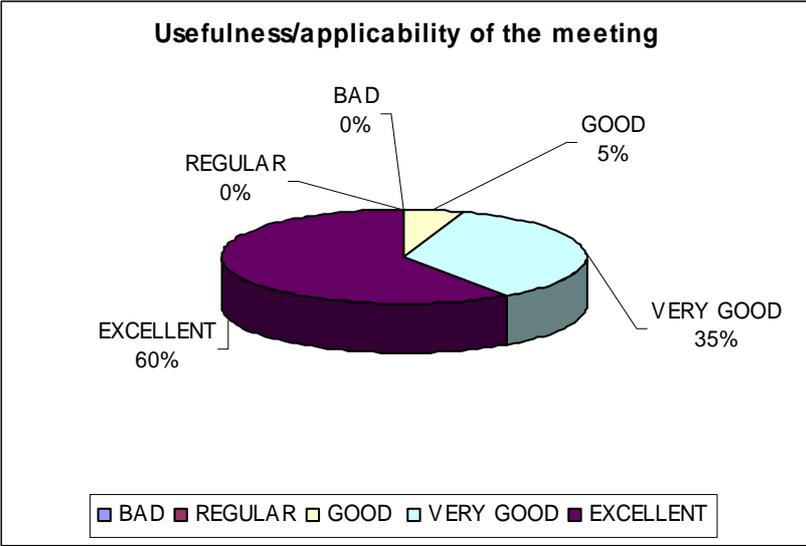
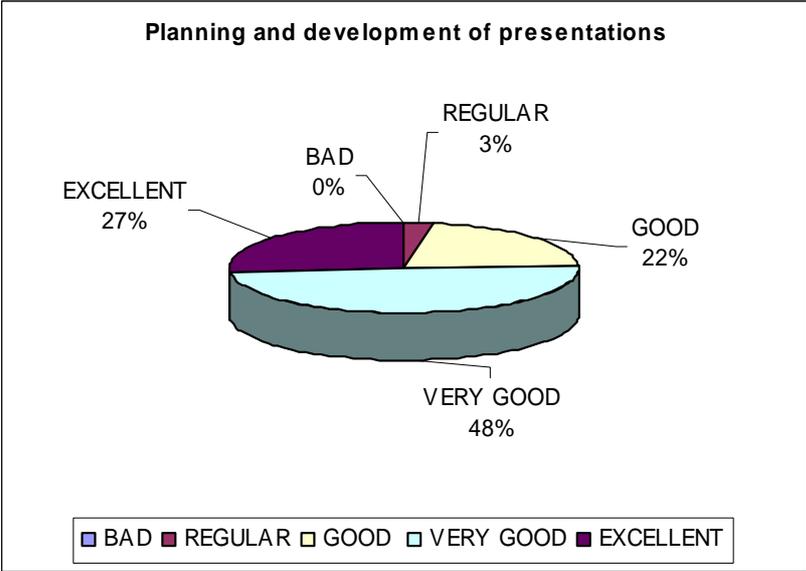
c. Workshop assessment by participants

MONTREAL PROTOCOL, REGIONAL WORKSHOP ON ALTERNATIVE TECHNOLOGIES FOR THE AIR-CONDITIONING AND REFRIGERATION SECTOR AND PREPARATORY MEETING OF THE ENGLISH SPEAKING CARIBBEAN OZONE OFFICERS. KINGSTON, JAMAICA, AUGUST 28-SEPTEMBER 1 2006

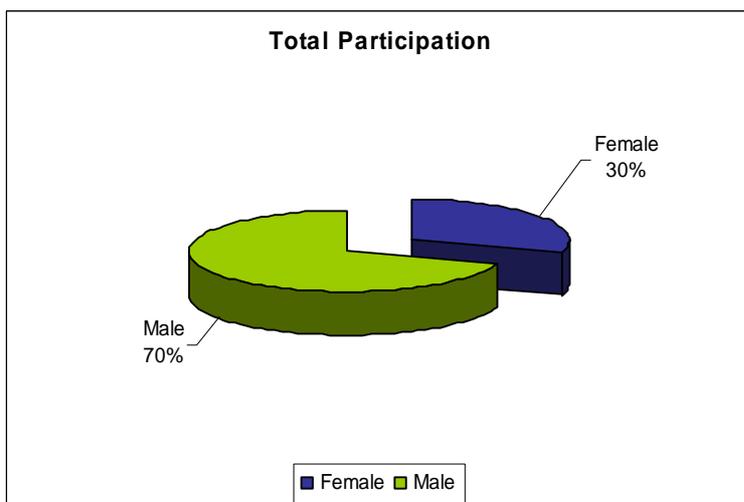
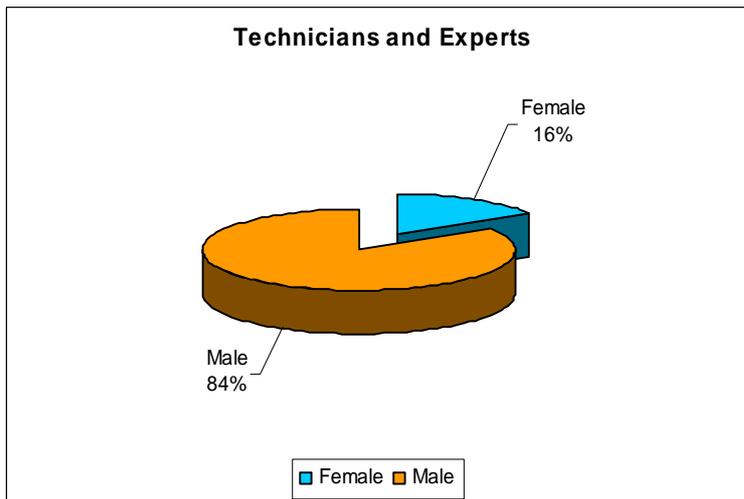
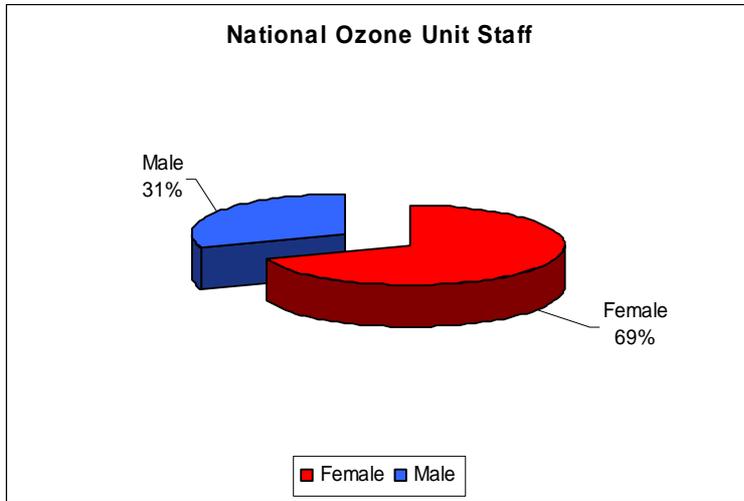
A. HOW DID WE DO?

	BAD	REGULAR	GOOD	VERY GOOD	EXCELLENT	PROM
1. Timely distribution of information	0	1	4	19	13	4.19
2. Planning and development of the meeting (logistics)	0	0	7	11	19	4.32
3. Planning and development of presentations	0	1	8	18	10	4.00
4. Usefulness/Applicability of the meeting	0	0	2	13	22	4.54
OVERALL QUALIFICATION:						4.3





GENDER PARTICIPATION EVALUATION



d. List of Presentations

1. A Review of Basic Principles of Refrigeration, Horace Nelson, Jamaica
2. Objectives and Expected Results of Workshop on Alternative Refrigerants, Artie Dubrie, UNEP/ROLAC
3. Montreal Protocol Compliance Mandates, Status, Consumption Trends Ozone Depleting Substances- for the Caribbean Region, Artie Dubrie, UNEP/ROLAC
4. Questions Relative to the CAP Evaluation and Workplan for the Second Phase, Cristobal Vignal, Canada
5. Management Plan for the Elimination of CFC in Cuba, Daniel Perú, Cuba
6. Adaptation of Alternative Technologies in Venezuela (Experiences and Lessons Learned), Pedro Sallent, Venezuela
7. Refrigerant Uses and Alternatives Refrigeration and Air Conditioning Industry of Canada, Ron Verch, Canada
8. CFC/HCFC/HFC Control in the Refrigeration and Air Conditioning Industry, Ron Verch, Canada
9. Phase-out Approaches from recently approved Terminal Phase-out Management Plans (TPMPs) for Low Volume Consuming Countries (LVCs), Suresh Raj, UNEP DTIE
10. Recent Advances and Approaches in the Training of Air-conditioning and Refrigerant Technicians and of New Refrigerants as Listed Under ASHRAE, Rubén Marchand, Mexico
11. Implementing the Montreal Protocol: The USA Experience, David Godwin, U.S.A.
12. Implementation of National CFC Phase Out Plan - National Plan for Technicians Training in Good Practices in Refrigeration, Gian Franco Ruggiero, Venezuela
13. Addressing Project Implementation: Regional and National Approaches, Suresh Raj, UNEP DTIE
14. Addressing Project Implementation Delays, Artie Dubrie, UNEP/ROLAC
15. Advantage to Regional and Sub-regional Approaches to Project Implementation, Bishnu Tulsie, Saint Lucia
16. Monitoring and Reporting Requirements for Terminal Phase Out Managements Plans (TPMPs), Kasper Koefoed-Hansen, UNDP
17. Public Awareness Activities for World Ozone Day 2006 in Trinidad and Tobago, Marissa Gowrie, Trinidad and Tobago
18. Saint Lucia National OzoneAction Website, Donnalyn Charles, Saint Lucia

19. 49th Meeting of the Executive Committee, Suresh Raj, UNEP DTIE
20. Highlights of the 36th Implementation Committee Meeting, Suresh Raj, UNEP DTIE
21. Creating a Sustainable Environment Through Multilateral Environmental Agreements: Lessons from the Implementation of the Montreal Protocol in Jamaica, Barbados and Trinidad, Ruth Potopsingh, Jamaica
22. Implications of the Caribbean Single Market and Economy on the Movement of Skills and Services, Angella Taylor Spence, Jamaica
23. Refrigeration and Air Conditioning Industry Trade Association of Canada, Ron Verch, Canada