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DRAFT ANNOTATED OUTLINE OF STUDY ON FINANCING OPTIONS TO ADDRESS CLIMATE CO-BENEFITS FOR HCFC PHASE-OUT IN LVCs WITH SERVICING SECTOR ONLY

(SUBMITTED BY UNEP)

INFORMATION PAPER

DRAFT ANNOTATED OUTLINE OF STUDY ON

FINANCING OPTIONS TO ADDRESS CLIMATE CO-BENEFITS FOR HCFC PHASE-OUT IN LVCs WITH SERVICING SECTOR ONLY

SUBMITTED BY UNEP TO
THE 70TH MEETING OF THE EXECUTIVE COMMITTEE OF THE MULTILATERAL FUND

3 June 2013

June 3, 2013

Note from UNEP

The Executive Committee through Decision 63/22 (a) approved a project for UNEP on resource mobilization to address climate co-benefits for the HCFC phase-out in LVC countries with servicing sector only. That project includes two components: a study and regional workshops on co-financing. UNEP is submitting this information paper in response to Decision 69/4 (ii) (a) which requested the agency to provide a draft of the study on financing options for low-volume consuming countries in the form of an information paper for the Executive Committee at the 70th meeting.

The attached paper is the draft annotated outline as it stands as of 4 June 2013. The project is a continuing work in progress and UNEP welcomes any guidance or inputs (e.g. examples of successful resource mobilisation in LVCs) from Executive Committee members or others to consider during the finalization of the document.

In accordance with the Decision 69/4 (ii) (b), UNEP will submit the final study to the 71st meeting, taking into account guidance provided by the Executive Committee at the 70th meeting, as well as inputs received during the resource mobilisation workshops being organised back-to-back with the Main meetings of Regional Networks of Ozone Officers.

For reference, since the 69th Executive Committee meeting UNEP has organized the first two resource mobilisation workshops: the first on 8 May 2013 at the Joint Meeting of Pacific Island Countries, South Asia and South East Asia Networks of Ozone Officers in Gold Coast, Australia, and the second on 21 May 2013 at the Annual Meeting of the ECA Network of Ozone Officers, Ohrid, FYR Macedonia. UNEP is planning to hold the last two workshops alongside the Joint Meeting of the English-Speaking and French-Speaking Africa Networks of Ozone Officers (Accra, Ghana, 23-26 September 2013) and the Meeting of the Latin American and Caribbean Networks of Ozone Officers (Jamaica, 30 September – 4 October 2013).

FINANCING OPTIONS TO ADDRESS CLIMATE CO-BENEFITS FOR HCFC PHASE-OUT IN LVCs WITH SERVICING SECTOR ONLY

A. INTRODUCTION

Section A will introduce the study, including how and why it came about, what it contains, the intended audience and its overall objective.

Key points that will be highlighted in this section include:

- The Executive Committee of the Montreal Protocol's Multilateral Fund approved separate resource mobilisation projects for each of the four implementing agencies (UNDP, UNEP, UNIDO, World Bank). The project approved for UNEP, entitled "Resource mobilisation to address climate co-benefits for hydrochlorofluorocarbons (HCFCs) phase-out in Parties with low volume and very low volume consumption of HCFCs (LVCs) with servicing sector only, in cooperation with other agencies", includes two elements: a paper on financing options and four regional workshops on co-financing.
- The UNEP project will produce a practical 5 step guide for National Ozone Units (NOUs) on how to find potential donors and prepare for discussions on financing to address climate co-benefits. At the same time, the paper will take a step back and describe LVCs and the challenges and opportunities an NOU in an LVC may face in finding support to address the climate co-benefits when implementing their HPMP.

B. PHASE-OUT OF HCFCs

Section B will outline the requirements for LVCs with respect to HCFCs under the Montreal Protocol.

Key points that will be highlighted in this section include:

- The phase-out schedule for HCFCs from Decision XIX/6.
- Executive Committee direction with respect to Article 5 Parties with low volume and very low volume consumption of HCFCs, the selection of alternatives to HCFCs that minimize impacts on climate and Executive Committee priority on cost-effective projects and programmes which focus on, *inter alia* substitutes and alternatives that minimize other impacts on the environment, including on the climate, taking into account global-warming potential, energy use and other relevant factors.
- As per Executive Committee decision 68/4(c), the study will take into account the Desk Study on the Evaluation of Chiller Projects (UNEP/OzL.Pro/ExCom/68/10) insofar as it applies to LVC context.
- What "climate co-benefits" means in the context of the HCFC phase out.

C. LVCs WITH REFRIGERATION SERVICING ONLY

Section C will describe the Parties that are the focus for the paper i.e. low volume consuming Article 5 Parties that consume HCFCs only for servicing in the refrigeration sector.

The highlights that will be incorporated in this section include:

- Definition of an LVC as per Executive Committee decision 60/44 (xiii).
- The way servicing is being defined for the purposes of the paper.
- The specific challenges that LVCs face in relation to obtaining support for implementing their HPMPs such as:
    - LVCs have small amounts of ODS which can mean few, if any, "economies of scale" available to reduce the cost of implementation actions.
    - It can be difficult for financial institutions to support projects in an LVC if the institution's administration fees assessed as a percentage against a small project are insufficient to cover the actual costs of the administrative support.
    - There are few "one-size fits all" solutions for LVCs. LVCs vary widely in terms of government structures, cultures, economies and expertise, among other things. Implementation actions must be designed for each LVC to fit each country's circumstances.
    - LVCs can be far from disposal/destruction facilities making transportation costs an important factor.
    - NOUs (particularly in LVCs) may not have experience in fund raising - it is not their traditional role.
    - Limited human and institutional resources are available in LVCs for activities like investigation of options, donor consultations, proposal writing, etc.

D. LVCs: PROGRESS SO FAR AND THE STARTING POINT

Section D will provide, first, an overview of the resources LVCs have received to date from the Multilateral Fund in relation to the HCFC phase out. It will then establish the overall starting point for LVCs in terms of climate co-benefits.

Some of the key points in this section:

- The nature and quantity of resources LVCs have received from the Multilateral Fund in relation to the HCFC so far. It will include graphics/illustrations of key data/trends referenced in the text.
- In developing countries, the numbers of refrigeration/air conditioning appliances is rising quickly as incomes rise. Refrigeration/air conditioning uses a large proportion of an LVC's electricity consumption.
- In 2008, world electricity consumption was 20,279,640 GWh and 20% of that is used to power air conditioning and refrigeration, the world average cost of production of 1 kWh is

US$ 3.5 which means that in 2008 costs to produce power for refrigeration and air conditioning are estimated to have been US$ 14,195,748,000. In relation to CO_2 emissions from electricity consumption, 67% of world electricity production is fossil fuel based.

- The estimated impact of refrigeration/air conditioning in LVCs including:
  - The size of the HCFC refrigeration servicing sector in LVCs.
  - The CO_2-eq emissions based on the GWP of the HCFCs.
  - The percentage of electricity consumption in LVCs devoted to refrigeration and air conditioning.
  - The estimated benefit for consumers from the reduction of costs for electricity with new refrigeration/air conditioning technology and the estimated benefit for governments and power generators from the reduced demand for electricity generation capacity with new refrigeration/air conditioning technology.

E. HPMP IMPLEMENTATION AND RESOURCE MOBILISATION FOR CLIMATE CO-BENEFITS

Section E will provide an introduction to resource mobilisation – i.e. resource mobilisation looks for funding sources beyond the Multilateral Fund to help finance the climate co-benefits related to HPMP implementation.

Important points made in this section are the following:

- NOUs from LVCs have expressed the need for additional support tailored to their unique conditions and noted that they do not have experience with approaching co-financing.
- With funding sources for climate benefits available outside the Multilateral Fund, the resource mobilisation opportunities for financing climate co-benefits of HPMPs in LVCs may prove useful to Parties.
- The section describes how LVCs characterize resource mobilisation for climate co-benefits in their HPMPs.
- Further, the section discusses the ways that the Multilateral Fund supports LVCs – e.g. in the preparation of HPMPs showing flexibility in allowing Pacific Island Countries to prepare/implement a regional HPMP and for some of the actions to implement the HPMPs.
- The Multilateral Fund provides resources to Article 5 countries for the HCFC phase out, and certain eligible investment projects related to the introduction of low-GWP alternatives can receive an additional 25% funding for safety-related activities. However that provision is not relevant to most LVCs. Decision XIX/6 indicated that the 'need' for additional support for LVCs will be satisfied primarily from the servicing sector (e.g. climate benefits can be achieved by means other than just replacing HCFC equipment**:** reducing refrigerant emissions through good servicing practices also reduces CO_2-eq emissions and thus protects the climate.**)**

F. APPLICABILITY/CONSIDERATIONS OF RESOURCE MOBILIZATION TO ADDRESS CLIMATE CO-BENEFITS IN THE REFRIGERATION SERVICING SECTOR

Section F first will outline briefly the alternatives to HCFCs including chemicals such as HFCs, HFOs, ammonia, carbon dioxide and hydrocarbons as well as "not in kind" alternatives. It will then go on to explore the opportunities available for HCFC phase-out in the refrigeration servicing sector from synergies between climate and ozone focusing on low-carbon technologies and actions and energy efficiency.

Key points in this section will include:

- A discussion of alternative technologies with zero-, low-, or medium-Global Warming Potential (GWP) to replace HCFCs that minimize the impact on climate. .
- A brief discussion of hydrofluorocarbons (HFCs) in particular.
    - In meeting the Montreal Protocol requirement to phase out HCFCs, other than natural refrigerants, hydrofluorocarbons (HFCs) have become the major replacements in many ODS applications.
        - HFCs are used because they do not deplete the stratospheric ozone layer and can be used with relative ease (technically) in place of CFCs and HCFCs. However, like the ODSs they replace, many HFCs are potent greenhouse gases. Although their current contribution to climate forcing is less than 1% of all other greenhouse gases combined, HFCs have the potential to substantially influence climate in the future. Under current practices, the consumption in MT of HFCs is projected to exceed by 2050 the peak consumption level of CFCs in the 1980s. This is primarily due to growing demand in emerging economies and increasing populations.
        - Each HFC has a different chemical composition and atmospheric lifetime and HFCs vary in their impact on climate forcing. In general, the shorter the lifetime for an HFC, the lower the accumulation in the atmosphere (for the same annual emission) and the lower the Global Warming Potential (GWP). HFCs with short lifetimes will also be removed more quickly from the atmosphere, which means that their influence on climate will also diminish quickly once emissions cease.
        - Conversely, the longer the atmospheric lifetime, the bigger is their influence on climate. Fully saturated HFCs (for example, HFC-32, HFC-125, HFC-134a, HFC-143a, HFC-152a) have lifetimes ranging from 1 to 50 years. Accordingly, their GWP for a 100-year time horizon also ranges greatly from 100 to 5,000.
- Opportunities available for HCFC phase-out in the refrigeration servicing sector:
    - The refrigeration servicing sector refers to servicing in domestic and commercial refrigeration, large systems, transport refrigeration, air-to-air air conditioners and heat pumps, water heating heat pumps and chillers.
    - Energy efficient systems. TEAP has reported that systems using low-GWP alternatives are able to achieve equal or superior energy efficiency in domestic refrigeration, commercial refrigeration and some types of air-conditioning systems. In the case of industrial refrigeration, for example, hydrocarbon and ammonia systems are typically 10-30% more energy efficient than conventional high-GWP HFC systems. Energy

efficient sectors include mobile air-conditioning, small air-conditioning units, small and larger reciprocating chillers (<7,000 kW), scroll chillers (10-1,600 kW) and screw chillers (100-7,000 kW).

- There are three general ways to achieve climate benefits through action on the ODS in the refrigeration servicing sector
  - **Conversion/retrofit with lower GWP** refrigerant or alternative possible with proper training e.g. low-GWP refrigerants, equipment replacement schemes, energy efficiency enhancements
  - **Implement better containment** (to minimize HCFC requirements for servicing existing HCFC dependent products until their retirement); e.g. leak reduction, recovery & recycling
  - **Implement voluntarily quotas of HCFC** e.g. restricting imports of energy inefficient equipment, energy standards/labeling.

- A table summarizing potential benefits and beneficiaries of some activities will be provided**.**
- A discussion of technology options for refrigeration will be provided in this section. Since technology for /air conditioning and servicing is advancing and changing quickly and to ensure this section does not become out of date quickly, links to key websites are provided.

G. OVERVIEW OF DIFFERENT FINANCING OPTIONS AT THE GLOBAL, REGIONAL AND NATIONAL LEVELS THAT ARE AVAILABLE TO LVCs

Section G will outline and describe the financing options available to LVCs when addressing climate co-benefits in the implementation of their HPMPs.

The key points made in this section will be the following:

- What gets financed by the Multilateral Fund (in HPMP Stage I)
  - Preparation & implementation of HPMPs
  - Enhancement of regulatory frameworks, capacity building, awareness
  - Training for customs officers
  - Training service technicians
  - Promotion of alternatives
  - Retrofit & recovery
  - Tool kits
- A section dealing with HPMP Stage II may be integrated (if approved at the Executive Committee 70).
- What could be financed through resource mobilisation
  - Climate co-benefits like: Energy efficiency gains
  - Scaling up
  - Demand side actions related to climate co-benefits
  - Enabling actions for climate co-benefits such as standards and energy efficiency labelling programmes
  - Economic instruments
- Resource mobilisation makes possible projects designed with a variety of funding sources. Examples of LVCs will be used in this section whenever possible to show where various

funding partners and funding sources are being used to address climate co-benefits in refrigeration and air conditioning and servicing.

- Official Development Assistance through Mainstreaming (ODA)
- Global Environment Facility (GEF)
- UN Agencies
- Bilateral partners, private sector, foundations, etc.
- World Bank Group/ MDBs including carbon finance, Climate Investment Funds (CIFs)
- Climate Development Mechanism (CDM)
- Domestic action including regulatory actions and economic instruments that provide both positive incentives and negative disincentives to influence behaviours. i.e.property rights (quotas); market creation (emissions trading schemes); fiscal instruments and charge systems (taxes, fines, charges, licence fees, subsidies, grants, tax credits); financial instruments (soft loans, revolving funds); liability instruments—using the threat of legal action to recover the cost of damages to provide firms with an incentive to internalise the costs associated with the risk (environmental damage, health or property damage to consumers); deposit refund systems (deposit refund system for used beverage containers).

- Case studies and examples will be used throughout this section to illustrate the use of resource mobilisation to implement HPMPs.
  - Example of the use of **economic instruments** in Croatia
  - Example of $12.856 million GEF project **Promoting Energy Efficiency in the Pacific** in Cook Islands, Samoa, Tonga, Vanuatu and Papua New Guinea with co-financing from the Asian Development Bank (14%), Governments of Cook Islands, Samoa, Tonga, & Vanuatu (26%), Power Utilities & Private Sector (24%), Government of Australia (14%) and Government of Japan (22%). The proposed project will result in the reduction in electricity and fuel consumption due to higher energy efficiency. The electricity and fuel saved from the successful implementation of the project will lead to a reduction of carbon dioxide emissions, which is estimated at 42,851 tons of CO_2 annually and an emissions reduction impact of 642,765 tones CO_2 over a 15-year period. The climate co-benefits of the project at the household and national levels in the Cook Islands will be significant.
  - Example of Macedonia's use of economic instruments by introducing an **environmental duty** imposed on all CFCs and HCFCs coming into the country in imported products. The funds received created an environmental fund and reduced the imports of the chemicals.
  - Possible case study from Fiji as well as Bangladesh on how the government **accesses the climate change funds** for their HPMP.
  - [Case studies from the other Implementing Agencies and bilateral agencies will also be solicited for this section]

H. PROS AND CONS OF DIFFERENT FINANCING OPTIONS IN THE CONTEXT OF LVCS

Section H will present the advantages and disadvantages and lessons learned for resource mobilisation strategies in a format that could be used by an NOU in an LVC to make choices among various options.

- The following considerations will be incorporated in the analysis of the advantages and disadvantages of various financing options wherever possible.
    - Human resources required for mobilization, time required for applications, length of time from application through to receipt of financing.
    - Additionality of the projects proposed in relation to chemicals addressed and energy efficiency.
    - Transparency & good governance, as well as covering cash flow.
    - Assurance that projects would avoid perverse incentives for countries.
    - Possibilities of profit-sharing, including return of funds to Multilateral Fund.
    - Sustainability of the projects proposed.
    - Avoidance of duplication of similar projects.
    - Transaction costs.

I. GUIDE FOR NOUs

Section I is made up of five component or steps that are intended to give an NOU in an LVC with servicing sector only an opportunity to move from understanding the opportunities that climate co-benefits can offer through to how to put resource mobilisation into practice.

The components of the guide being developed are:

- **STEP I - Understanding the climate co-benefits.** This component should assist the NOU to quantify the climate benefits and will include benefits from efficiency gains, ODS, GWP, decrease in energy needed, and destruction.

- **STEP II - Who you need to know.** This component will describe the likely places within the country and in other agencies in the government where actions of interest to the implementation of the HPMP may be underway to implement standards, labeling and energy efficiency programs. It will also suggest how to find useful contacts or focal points in other programs like GEF and Climate type Funds in an effort to promote "working with your partners on climate co-benefits".

- **STEP III - Bilateral Donors and International Organizations working within the country.** Every country has donor agencies to deal with both bilateral and multilateral donors. Step III will explain how to identify potential partners active in climate activities that could have an interest in supporting climate co-benefits of the HPMP implementation.

This component will demonstrate how to document the parts of an HPMP implementation that needs financing so that an NOU will know how to be prepared for discussions with potential donors.

- **STEP IV- How to be prepared for discussions with potential partners.** This component will explain what an NOU in an LVC needs to know and how to prepare before engaging with a bilateral donor or with multilateral organizations agencies. For instance, this component will demonstrate how to document a potential project's possible climate benefits i.e. benefits from efficiency gains, ODS, GWP, decreases in energy needed.

- **STEP V - Background support.** This final component will provide information on various international programs as well as web sites where useful information will be available. It will also include information on methodologies to estimate carbon credits for various applications for use in carbon financing.

ANNEXES

1. List of LVCs
2. References