



UNIDO's experience in resource mobilization and climate benefits related to the refrigeration servicing sector

Joint Meeting of the Latin America and Caribbean (LAC)
Networks of Ozone Officers

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General considerations

- In general, we know that HPMPs under the Montreal Protocol: HCFCs should be phased out and replaced by alternatives.
- This approach does not necessarily take into account other environmental effects of the alternative technology.
- Decision XIX/6 calls Parties to introduce technologies that provide co-benefits, in particular in regard to the climate profile of the chosen technology.



Relevance for UNIDO-Green Industry

- UNIDO has a specific mandate to link industry with energy efficiency and environmental protection (Green Industry)
- Branches at UNIDO dealing with:
 - **Montreal Protocol** projects (MLF and GEF)
 - **Climate Change** (focus on energy)
 - **Chemical management** and cleaner production networks
 - **Agro-industrial development**
 - Implementation of projects under green Industry concept, **involves energy efficiency, resource management and chemical management**



Emissions of greenhouse gases to consider (for example in refrigeration and air-conditioning applications)

- Direct emissions from refrigerants
 - Eliminated through replacement of refrigerants
- Indirect emission from energy consumption
 - To further reduce emission of greenhouse gases the energy efficiency of the system has to be improved



Background

- **Decision XIX/6:** promotion of alternatives to HCFCs to minimize environmental impacts, in particular climate impacts;
- **Decision XX1/9:** request to ExCom to consider **additional funding**;
- **Decision (ExCom) 63/23**, request to UNIDO to prepare two project proposals for possible co-financing for HCFC activities to be funded as resource mobilization activities;
- Final report was **endorsed at the 69th ExCom meeting** (April 2013);
- The project proposals were **submitted by UNIDO to the GEF Secretariat** in June 2013 and are currently **under evaluation**.



In this context UNIDO consider

- **Projects under the Funds Mobilization initiative were considered as an opportunity to incorporate energy efficiency aspects in HPMP implementation.**
- **In most countries the servicing sector plays an important role over the next year to progressively phase out HCFCs and to find sustainable solutions for the future.**
- **Need to convert existing installations to low GWP and energy efficient technologies.**
- **Obsolete ODS collected should be disposed in an environmentally friendly manner.**



Project initiatives prepared

- Energy efficiency aspects in HPMP implementation.
- Replacing servicing sector HCFCs and to find sustainable solutions for the future.
- Destruction of obsolete ODS by sustainable financial mechanism



Importance for the food processing and fishing industry

- The conversions in this area could be important for Article 5 countries, since most of the installations are used in the industrial refrigeration sector (cold stores, fish processing, handling and ice-making plants and freezing units of fishing vessels). The equipment used usually has **high carbon emissions** and work with low energy efficiency.
- Countries to target with demonstration projects: Viet Nam and the Gambia (LVC)



Overview of projects

- The **two project proposals explore a range of refrigerants** with low global-warming potential, including ammonia-brine systems, CO₂ in single as well as cascade systems, and HC units.
- **Equipment upgrades will greatly reduce the emission of ODS and greenhouse gases** by replacing HCFC-22 with refrigerants with very low GWP and with better energy performance.



Main components of the projects

- Policy and Regulatory Support
- Technology Transfer and Technical Assistance
- Awareness Raising



Viet Nam and The Gambia

Viet Nam

- focus on **cold storage industry** to select the best low-GWP replacements;
- the project includes a **combination of measures**, including policy and regulation, technology transfer, capacity building and awareness-raising, and incentive mechanisms for beneficiaries to support the conversion.

The Gambia (LVC)

- focus on **refrigeration training centers** to select and promote the best low-GWP replacements;
- the project will design and implement **incentive mechanisms** to support the adoption of energy efficiency measures.



Technology Transfer – Viet Nam

*Expected Outcome: Technology with low global-warming potential (**hydrocarbon system**) is demonstrated, replicated and deployed.*

Objective: To introduce alternative refrigerant systems to the Vietnamese market and to demonstrate their effectiveness to policy-makers and to facility owners and operators.

The mechanisms that will be put in place include:

- (i) Pilot facility conversions;
- (ii) Financial scheme for facility owners to convert their facilities to the new technology;
- (iii) Creation of a local knowledge based on alternative refrigerants, including training and capacity building.



Technology Transfer – The Gambia

Expected Outcome: Technical and financial support on replacement refrigerants, and reducing greenhouse gas emissions and operational costs, is ensured.

Aim: To pilot a technology transfer mechanism through the establishment and operation of the technical support mechanism, while introducing innovative technologies to this sector.

The technology focus will be on energy efficiency improvements; reduction of ODS leaks and reduction of contaminated refrigerants; and introduction of two types of demonstration systems – **one using hydrocarbon refrigerant for retrofits and a second full-scale CO₂ industrial or commercial unit with cascade** – to be piloted in a training environment.



Financial Scheme

- UNIDO aimed at **mapping and identifying potential donors and funds** for leveraging additional sources for the pilot projects;
- A **programmatic approach** to the matter was adopted aiming at identifying a **methodology to be replicated** in all HCFC programmes in the future;
- The focus was shifted to the **GEF as a main funding source** for these activities;
- **Co-financing from partners was identified** (governments, beneficiaries, UNIDO but also technology providers, local development banks , EU and Shecco);
- **Revolving-fund schemes** have been identified as an important tool for the adoption of the new technologies.



Funding and Grant

VIET NAM	Grant	In-kind
TOTAL	1,480,000	665,000
GEF	290,000	-
UNIDO	210,000	35,000
Government	80,000	120,000
Partners	-	510,000
Development Bank	900,000	
GAMBIA	Grant	In-kind
TOTAL	1804,000	1,166,000
GEF	495,000	-
UNIDO	228,000	35,000
Government	1,081,000	551,000
Partners	-	580,000

**TOTAL MOBILIZED
by UNIDO:**

USD 3,174,000



Conclusions

- UNIDO has a mandate to promote sustainable industrial development, and environment protection is a pillar of sustainability (Green Industry)
- Protection is interlinked, a holistic approach is required not only in the design of the project but in funds mobilization.
- Mobilization of different sources of funds is a precondition to success in the implementation of an environmental project.
- UNIDO took into consideration **experiences** gained through the implementation of the **chiller projects**, in particular on different financial mechanisms established in different countries;
- Co-financing from partners and beneficiaries, Development Banks, Carbon Funds, Carbon Markets, Direct Investments, etc, assessment of Socioeconomic benefits and gender mainstreaming should be part of the project strategy;