



Conversion of HCFC-22 Based
Facilities to Ozone and
Climate Friendly Alternatives
in the Fishing / Food
Processing (Servicing)
Sectors in Viet Nam and the
Gambia

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- **Decision XIX/6** on accelerated HCFC phase-out encourages the promotion of alternatives to HCFCs that minimize environmental impacts, in particular impacts on climate, and meets other health, safety and economic considerations;
- **Decision XX1/9** requests the ExCom to consider providing **additional funding** and/or incentives for additional climate benefits **where appropriate**;
- In **Decision 63/23**, the ExCom requested UNIDO to prepare two project proposals for possible co-financing for HCFC activities to be funded as resource mobilization activities;
- Final report was **submitted by UNIDO and endorsed at the 69h ExCom meeting** (April 2013) and is available in document **UNEP/OzL.Pro/ExCom/69/5**.



UNIDO has a specific mandate to link industry with energy efficiency and environmental protection

- Branches at UNIDO dealing with:
 - **Montreal Protocol** projects (MLF and GEF)
 - **Climate Change**, with a special focus on energy
 - **Chemical management** and cleaner production networks
 - **Agro-industrial development**, with a focus on development of agro-industrial chains
- UNIDO's DG is chairing the **UN Energy Group**
- Implementation of projects with **involvement of GEF and MP focal points**



- UNIDO considered all sectors covered by the MLF and identified the **servicing sector** as one of the most critical sectors in terms of sustainability, diffusion and dimension;
- Due to the **very limited grant provided** by the MLF for servicing activities, UNIDO focused on **finding a mechanism for promoting the conversion of existing installations** with low-GWP and energy efficient technologies;
- UNIDO identified the **fishing industry as the most appropriate sector** for the pilot projects, since most technologies used in Article 5 countries in the industrial refrigeration sector (cold stores, fish processing, handling and ice-making plants and freezing units of fishing vessels) have a **high carbon emissions** and work with low energy efficiency.



- The **target countries were selected** according to the size of the country, the geographical region and the role of fishery in the national industry.
- 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 projects:

1. Policy and Regulatory Support
2. Technology Transfer and Technical Assistance
3. Awareness Raising

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.



Viet Nam

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

Aim: 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.



The Gambia (LVC)

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.



#8 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 and Shecco);
- **Revolving-fund schemes** have been identified as an important tool for the adoption of the new technologies.



VIET NAM	Grant (USD)	In-kind (USD)	Total (USD)
TOTAL PROJECT COSTS	1,480,000	665,000	2,145,000
GEF	290,000	–	
UNIDO	210,000	35,000	
Government	80,000	120,000	
Private Partners	–	510,000	
Environmental Fund	900,000	–	
GAMBIA			
TOTAL PROJECT COSTS	1,804,000	1,166,000	2,970,000
GEF	495,000	–	
UNIDO	228,000	35,000	
Government	1,081,000	551,000	
Private Partners	–	580,000	

TOTAL MOBILIZED by UNIDO: USD 5,115,000

(USD 4,330,000 already received)



- UNIDO took into consideration **experiences** gained through the implementation of the **chiller projects**, in particular on different financial mechanisms established in different countries;
- The System for Transparent Allocation of Resources (STAR) allocation under GEF covers biodiversity, climate change and land degradation. There is a **strong competition for funds under STAR**;
- **GEF promotes a holistic approach** to the project design. Co-financing from partners and beneficiaries, Project Endorsement Process, assessment of Socioeconomic benefits and gender mainstreaming should be part of the project strategy;
- **Dialogue among GEF focal points and NOUs** should be promoted at local level to identify priorities, synergies and cooperation.



 **ATMO**
sphere
technology summit
natural solutions
3 - 4 June 2013 in Vienna

Thank you very much for your attention

UNIDO
Montreal Protocol Branch
Programme Development and Technical Cooperation Division