

# Implementation of the Hydrochlorofluorocarbons (HCFCs) Phase-out Management Plan, stage 1, Republic of Moldova

<b>Donors:</b>	Multilateral Fund for implementation of the Montreal Protocol
<b>Main Partners:</b>	State and Private Enterprises in the Refrigeration and Air Conditioning sectors, Customs Service
<b>Timeframe:</b>	2011-2015
<b>Total Budget:</b>	US\$88,000
<b>Impl. Modality:</b>	NIM (via Ministry of Environment, Ozone Office, with UNDP CO support)

**Overall Project Objective:** *Support the country in fulfilling its international commitments under the Montreal Protocol of achieving the immediate phase-out targets of a freeze at the baseline in 2013 and subsequent 10% reduction of the baseline in consumption of HCFCs by 2015.*

## **Planned Project Outputs :**

- **Regulatory measures , including necessary amendments to the national regulation on ODS** developed, taking into account the new phase-out schedule of HCFCs;
- **Technical capacity increased** for the existing technicians dealing with ODSs and/or HCFCs **and vocational training system** strengthened
- **Monitoring of timely implementation** of HPMP components ensured

# HPMP, Stage I

- Hydrochlorofluorocarbons Phase out Management Plan or HPMP (**stage I, period 2011-2015**) of the Republic of Moldova (HPMP Stage 1) approved at the 63rd ExCom meeting held in April 2011.
- The HPMP aimed at the **10% HCFC reduction as an overall objective by 2015**, contained two tranches.
- UNDP was as the implementing agency.
- Moldova's HPMP, stage 1, has been included:
  - **policies and regulations;**
  - **technical assistance, training, awareness;**
  - **coordination and monitoring.**
- Total cost - capped under decision 60/44 for this HPMP, constituted US\$ 88,000.

# HPMP, Stage I

- HPMP Stage 1 was featured by a combination on **non-investment** and **investment** components, including:
  - legislative improvements on HCFC controls,
  - capacity strengthening for Customs,
  - equipment and tools supply to enforcement authorities and servicing sector.
  - Verification report of HPMP, st. I concluded that Moldova is in compliance with 2013 and 2015 HCFC reduction obligations.

# HPMP, Stage I

- The Government of Moldova, through the efforts of the Ministry of Environment (MoE) and National Ozone Unit (NOU), **established legislative measures to control the import of ODS, including HCFCs and equipment that contain these chemicals.**
- The Regulation on trade regime & regulating the use of halogenated hydrocarbons that are depleting the ozone layer (Law No. 852-XV dated 14.02.2002) **is currently in place**, and is the fundamental legislative document concerning implementation of the Montreal Protocol in the Republic of Moldova.
- The licensing system **has been updated and HCFCs** (import, export & consumption) are now controlled by the national legislation **(Law No. 228 dated 10.10.2013).**

# HPMP, Stage I

- The Law No. 228 dated 10.10.2013 stipulates:
- Any import of ODS and ODS containing equipment/products requires a prior **License/Authorization** prepared by the MoE and issued within annual quota limits. The Licence is valid for 90 days;
- **The Programme for Phase-out of the HCFC for 2016-2040 and Action Plan for its implementation during 2016-2020** was approved (**GD No. 856 dated July 13, 2016**);
- Customs is responsible for border monitoring and control, and carries out identification and inspection of imported ODSs and products containing ODSs;
- Customs codes were adjusted to facilitate monitoring of ODS/equipment with ODSs;
- Information from importing companies on their annual imports of ODS/equipment is required;
- State Ecological Inspection provides information retrieved during ecological inspections.
- According to Law import, export, re-export, introduction into market and transit of equipment, components and technologies that contain ODSs (excluding HCFCs) are all banned.
- As a result of this, imports of non-CFC alternatives (HFCs) and equipment with such substances annually is increasing.

# Obtained Results

- Legal documentation for **Training and Certification System of the service refrigeration technicians, harmonized with F-gas EU Regulation No. 842/2006 and EU Regulation No. 303/2008** was developed. The regulation it is planned to be adopted during HPMP II stage;
- 60 technicians trained in 2013, 21 in 2014, 51 in 2015 and 83 in 2016 according to F-gas EU Regulations No. 842/2006/303/2008 and supplied with additional sets of basic recovery equipment and tools have been serviced RAC equipment using “ozone friendly” technologies;
- Basic Recovery equipment and servicing tools were purchased & distributed to Servicing Companies in order to equip trained and certificated technicians in line with new system.

## Obtained Results (continuation)

- **Update of the Code of Good Practices** in Refrigeration and AC sectors was done. New Code was updated with new information: natural alternatives to HCFCs, international & national standards in domain, new “ozone friendly” technologies;
- Consultations meetings (organized together with Public Refrigerant Association of the Republic of Moldova and main importers, as well as with the Technical University of Moldova) were conducted to enable effective implementation of HPMP (Stage 1, tranche I and II);
- A web site was developed and maintained ([www//frigotehnica.md](http://www//frigotehnica.md)) for the Public Association of Refrigeration Technicians from the Republic of Moldova.

# Obtained Results (continuation)

- Three (3) advanced portable refrigerant identifiers were purchased and distributed to the Customs Service (specifically, to its central laboratory);
- Twenty-six (26) Customs trainers (trained in 2015) and twenty-six (26) Customs officers were trained during HPMP, Stage I;
- The regime of environmental taxation for the ODS within the system of customs control was amended so that the HCFCs are subject to environmental taxation. According to the Law on payment for pollution of the environment, the environmental tax that need to be paid for the **import of HCFCs is 0.5%** from the price of the goods (tariff code: 2903), however the alternative and transitional substances for HCFCs (i.e., tariff code 2903. 39, which include HFC-134a, HFC-152a, HFC-125, HFC-32, and HFC-23) are not subject to environmental taxation;
- **Guide “Regulation of the Import/Export of ODSs**, equipment and products with ODSs” was updated;
- New training materials were elaborated, and some were updated;
- Technical University (faculty of Mechanics) as well as Technological College introduced new curricula received new topics in the study curricula - influence of refrigerants on the environment, new low GWP and non-HFC technologies; natural refrigerants.



# HCFC consumption data

ODS	2009	2010	2011	2012	2013	2014	2015	Baseline
HCFCs (ODP tonne)	1.20	0.70	1.31	1.88	0.99	0.76	0.82	1.00

- All HCFCs and ODSs available in the Republic of Moldova are imported;
- As such, consumption is defined as imports;
- Primarily, these imports are from China and not very significant quantities have been imported from European countries (Germany, Scotland, Ukraine and Romania);
- The main importers in the period 2011-2015 are “Ecolux” Ltd, “Frio-Dins” Ltd, “Frigo-Ind” Ltd, „YORK Refrigerent” Ltd and “Dina Cociug” Ltd.;
- As a rule, HCFC-22 is imported in non-refillable cylinders of 13,6 kg. Export of HCFCs has not been registered.

# Annual HCFC-22 consumption 2011-2015 in MT/ODP tonnes (CP data)

2011		2012		2013		2014		2015	
Servicing	Import	Servicing	Import	Servicing	Import	Servicing	Import	Servicing	Import
21.9/1.20	23.8/1.31	29.5/1.62	34.2/1.88	28.9/1.59	18.08/1.0	28.4/1.56	13.8/0.76	24.8/1.36	14.9/0.82

- Consumption of HCFC-22 in Moldova by RAC sectors **(2015):**
- **Industrial sector** - 15 MT;
- **Commercial sector** - 8 MT;
- **A/C** - 1.4 MT;
- **MAC & transportation** - 0.4 MT.

**Total – 24.8 MT**

# Price of HCFCs, HCFC blends and alternatives

Refrigerant	Price USD/kg, (taxes excluded)					
	2010	2011	2012	2013	2014	2015
<b>R-22</b>	4.6	4.8	5.4	4.2	5.4	7.4
<b>R-134a</b>	15.5	16.2	12.7	10.2	10.5	8.5
<b>R-404a</b>	9.0	21.0	15.5	12.7	12.7	10.1
<b>R-406a</b>	5.0	10.5	7.4	6.2	6.2	7.2
<b>R-407c</b>	11.5	19.4	15.7	15.0	15.0	8.8
<b>R-410a</b>	11.5	19.4	15.3	14.0	14.0	8.8
<b>R-507c</b>	10.0	21.0	15.7	14.6	14.6	10.2
<b>R-600A</b>	11.0	10.6	8.3	7.1	8.9	7.7
<b>R-290</b>	-	-	-	-	-	11.5

# THE CONTRAVENTION CODE OF THE REPUBLIC OF MOLDOVA, Article 148

- Violations of the regime and procedure for use of chemical substances that destroy the ozone layer:
  - **Manufacturing or putting into commercial circulation aerosols or portable fire extinguishers** containing chemical substances that destroy the ozone layer shall be sanctioned by a fine of **20 to 30 conventional units for individuals and by a fine of 200 to 300 conventional units for legal entities**.
  - Using chemical substances that destroy the ozone layer in **manufacturing aerosols**, new industrial cooling systems, mobile air-conditioning units and sterilization products or using them in any other new area in which they were not previously used shall be sanctioned by a fine of 20 to 30 conventional units for individuals and by a fine of 200 to 300 conventional units for legal entities.
  - Using chemical substances that destroy the ozone layer **in manufacturing wallboard and packaging material** made from organic, flexible or semi-rigid plastic foam shall be sanctioned by a fine of 10 to 20 conventional units for individuals and by a fine of 100 to 200 conventional units for legal entities.
  - Using or putting into **commercial circulation cleaning agents and solvents** containing one or more chemical substances that destroy the ozone layer, except for carbon tetrachloride when it is used as a solvent in chlorination processes in closed systems or as a solvent in processes in which for technical reasons it cannot be substituted with another substance that is inoffensive to the ozone layer shall be sanctioned by a fine of 10 to 20 conventional units for individuals and by a fine of 100 to 200 conventional units for legal entities.
  - Violations of rules for using **methyl bromide in agriculture** shall be sanctioned by a fine of 10 to 20 conventional units for individuals and by a fine of 100 to 200 conventional units for legal entities.
  - Using, storing or transporting containers with chemical substances that destroy the ozone layer and that are **not labeled “Containing Substances Destroying Ozone Layer”** shall be sanctioned by a fine of 25 to 35 conventional units.
  - The **refusal of importers**, exporters and persons who commercially distribute substances, products and equipment containing substances that destroy the ozone layer **to present to competent authorities the documents** provided for by law on the use of such substances shall be sanctioned by a fine of 15 to 25 conventional units for individuals and by a fine of 150 to 250 conventional units for legal entities with or without the deprivation in both cases of the right to carry out certain activities for a period of 3 to 6 months.

# Stakeholders

- **Ministry of Environment** is responsible for the implemented yet 15 ODSs Projects as well as of under implementation the HPMP (stage I) assisted by the National Ozone Unit.
- **Public Association of the Refrigeration Technicians from the Republic of Moldova** on the regular basis is given his assistance by its members.
- Association was (according to HPMP, Stage I) responsible for development of new certification system (according EU Directive F-gases). Now the Association, in collaboration with Ministry of Economy (Technical Centre for Industrial Security and Certification) and Training Centre “TEHNOFRIG” is responsible for implementation of new Certification System.
- **National Ozone Unit** will continue close collaboration with **Customs Service** (CS) under the Ministry of Finance (MF), which is a relevant data provider, by offering relevant statistics on import/export of HCFC and HCFC-based equipment/products.
- NOU will initiate a closer collaboration with **Climate Change Office (CCO) of the Ministry of Environment**, which is designated as Lead National Authority for compiling the National Greenhouse Gas Inventories; including the F-gases (HFCs, PFCs and SF6) emissions (the last available inventory covers the period since 1990 to 2012, while in case of F-gases, respectively the period since 1995 to 2012).
- NOU will initiate also a closer collaboration with the **Agency for Energy Efficiency** - an administrative body for energy efficiency and renewable energy resources and is responsible for implementing state policies specifically focused on creating preconditions for improving energy efficiency.
- **State Ecological Inspectorate** - public institution under the MoEN that undertakes the state environmental control in compliance with environmental legislative and regulatory framework in place in the Republic of Moldova.
- **Ministry of Agriculture and Food Industry (MAFI)**, which is responsible for developing and promoting of state policy for sustainable development of the country's agribusiness sector.
- **Media institutions and NGOs** also have an important role in public informing and awareness raising about environmental issues.

- Asociația Obștească a Frigotehniștilor
- Universitatea Tehnică a Moldovei
- Oficiul «Ozon»



# **CODUL BUNELOR PRACTICI ÎN DOMENIUL FRIGULUI ȘI CONDIȚIONĂRII AERULUI**

Chișinău 2015

Ministerul Mediului al Republicii Moldova

Oficiul Ozon

## Ghid

pentru colaboratorul vamal  
privind reglementarea  
importului/exportului  
substanțelor care distrug  
stratul de ozon, precum și al  
echipamentelor și produselor  
ce conțin asemenea substanțe



Chișinău 2015



MINISTERUL  
MEDIULUI  
AL REPUBLICII MOLDOVA

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# AUTORIZAȚIE

**Seria 002**

**Numărul 01/2014**

**Întreprinderea**

**S.C „Ecolux” S.R.L**

**Adresa**

**mun. Chişinău, str. 31 August 1989,  
79/1, ap. 29, MD – 2012**

**Genul de activitate**

**Importul din China a substanțelor  
chimice, inclusiv: R-22 în cantitate  
totală de 6800 kg .**

**Locul activității**

**Republica Moldova**

**Condiții speciale**

**Prezentarea Ministerului Mediului a  
rapoartelor anuale privind cantitatea  
importată de substanțe chimice ce  
distrug stratul de ozon.  
Importul se va efectua din țările –  
părți la Protocolul de la Montreal.**

**Eliberată**

**20 ianuarie 2014**

**Termenul de valabilitate**

**90 zile**

**Ministru**



**Gheorghe ȘALARU**



# Forecast for refrigerant use in RAC sectors (HPMP, Stage I and post 2016)

	Refrigeration & AC sub sectors	Steps	
		Step 1 (2011 – 2015)	Steps 2 (2016 – 2020)
1	Industrial	R717, R404A	R717 ( <b>NH3</b> ), R744, a mixture of natural agents
2	Commercial	R404A, R407A, R407B, R507	R407C, R410A, R744 ( <b>CO2</b> )
3	Air-conditioning	R407C, R410A	R410A
4	Household	R600a, R600a/ R290	R600a, R600a/ R290 ( <b>propan</b> )
5	Transport	R404A	R744

# Second Stage Implementation Programme HPMP, (2016-2020)

- **Objective:**

To assist the Government of Moldova to achieve the planned HCFC reduction targets in the timeline from 2016 to 2020 – the 35% reduction in HCFCs use from the baseline.

Implementing Agencies:

UNDP- leader; UNEP (cooperating agency).

# Second Stage Implementation Programme HPMP, (2016-2020)

## Non-Investment component (UNEP)

- The action plan for 35%-reduction of the HCFC consumption by 2020 will include:
- Regulatory measures consisting of:
- Harmonization of legislation with EU legislation;
- HCFC annual import quotas, permits and environmental taxation;
- Reporting system for the servicing sector.
- Technical Capacity Development:
- Training and certification of existing technicians with partially supply of basic service equipment;
- Support to improve knowledge base at vocational schools;
- Support to Refrigeration Association;
- Training of Customs officers & of environmental inspectors;
- Project coordination, management & monitoring.

# Regulatory Measures

- Modifications of the existing Regulation on ODSs and alternative refrigerants:
- **Adoption** of regulation on certification system which will allow for implementation of new certification system (harmonized with EU F-Gas Regulation);
- Annual HCFCs import quotas based on the corrected baseline figures for 2016-2020 will be distributed every year;
- Introduction of a **ban on import** of all equipment containing or relying on HCFCs (new and second hand) for 2017;
- **Introduction of an environmental tax** for the import of HCFCs chemicals, as well as some of HFCs;
- A web-based **electronic reporting and licensing system** will be developed and approved.

# Technical Capacity Development

## *Training and certification of service technicians*

According to the Law No. 852-XV dated 14.02.2002 and updated by the Law No. 228 dated 10.10.2013, technical refrigeration personnel involved in repair and maintenance of ODS containing equipment and installations for household, commercial and industrial use, **has to be trained and re-certified every three years.**

Training is done through courses organized by state education institutions, qualified in this field (Technical University of Moldova), in collaboration with Ministry of Economy (Technical Centre for Industrial Security and Certification), Training Centre “TEHNOFRIG” and RAC Association.

# Technical Capacity Development

- It is estimated that approximately **100 technicians** will need to be trained during HPMP, stage II;
- Production of new lecturing materials/manuals/brochures, which would be periodically upgraded;
- Supply and provision of additional sets of basic recovery equipment and tools (UNDP investment component).

# Technical Capacity Development

- **Strengthening the Public Association of the Refrigeration Technicians**
- **continuing support of its own **web-site**;**
- **Limited number of workshops on HCFC alternatives and equipment maintenance practices for its members;**
- **Modest upgrade of its service tools for the training (UNDP investment component).**

# Technical Capacity Development

- **Strengthening the capacity of Technological College**

Education and training of technical personnel in RAC is carried out by the Technical University of Moldova and training centre “Tehnofrig”, and by the Technological College. **Technological College provides training in service of domestic appliances only;**

Support provided to Technological College:

- to develop training program, including practical guides for service technicians working with natural refrigerants (HC, ammonia, CO<sub>2</sub>).



# Technical Capacity Development

- *Customs officers/environmental inspectors Training*

Elaboration/Update/printing of Training materials;

To produce a pocket leaflet which is essential tools to enhance the knowledge of customs officers regarding requirements of the Montreal Protocol and to achieve sustainability of activities in the field.

Training of Customs officers;

Training of Environmental Inspectors.

# Technical Capacity Development

- **Project coordination, management and monitoring.**

Coordination of the national activities towards the HPMP Phase-out Plan;

Implementation of the recent approved

**Programme for Phase-out of the Hydrochlorofluorocarbons (HCFCs) for 2016-2040 and Action Plan for its implementation during 2016-2020** (GD No. 856 dated July 13, 2016).

# Awareness Raising Activities

- Public awareness activities are an integral part of the IS Project (phase IX – 01. 2017-31. 12. 2018).
- **The main awareness raising activities will target:**
  - Public schools, especially vocational schools;
  - Service technicians and industry;
  - End users that own and/or operate equipment.

## Other Impacts on the Environment Including on the Climate

- Involvement of authorities responsible for climate change and energy efficiency policies (specifically, Climate Change Office of the Ministry of Environment and Agency for Energy Efficiency of the Ministry of Economy) as key institutional stakeholders;
- Adoption of EU technical standards for RAC sector;
- Introduction of refrigerant management regulations that would in future extend to HFCs.

## Investment component (UNDP)

- **Improvement of HCFC Management and Alternatives demonstration Projects;**
- Technology support to RAC sector;
- Procurement of equipment/tools;
- Demonstration of new technologies in commercial sector (natural refrigerants).

## Investment component (UNDP)

- **Strengthening of the HCFC re-use system;**

Tools for service centers and technicians  
(20 sets);

- **Demonstration of new technologies in commercial sector (natural refrigerants);**

Demonstration of alternative technologies  
(1-2 sites) – commercial sector.

# PROJECT COORDINATION, MANAGEMENT AND MONITORING

- The HPMP Stage II will be implemented by the National Ozone Unit with support from UNDP as the lead agency and UNEP as the cooperating agency;
- UNDP will use National Implementation Modality (NIM);
- UNEP will utilize its standard operating procedure on SSFA agreements with the NOU-Moldova.



Thank you very much  
for Your attention!