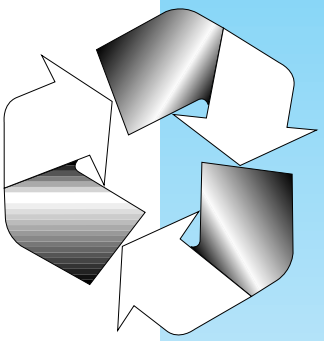
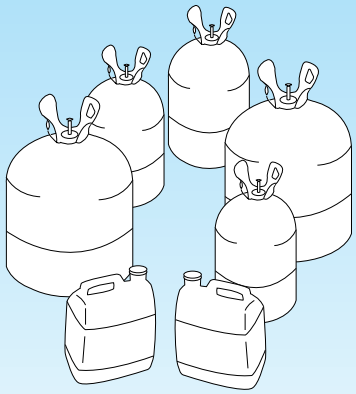
RECOVERY & RECYCLING SYSTEMS

GUIDELINES

Phasing out ODS in Developing Countries

REFRIGERATION SECTOR





Multilateral Fund for the Implementation
of the Montreal Protocol

United Nation Environment Programme
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OzonAction Programme

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United Nations Environment Programme
Division of Technology, Industry & Economics
OzonAction Programme
Tour Mirabeau
39-43 Quai André Citroën
75739 Paris Cedex 15
France

Multilateral Fund for the Implementation
of the Montreal Protocol
1800 McGill College Avenue, 27th Floor
Montreal, Quebec H3A 3JC
Canada

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Acknowledgements

This project was managed by:

Ms. Jacqueline Aloisi de Larderel, Director
UNEP DTIE, France

Mr. Rajendra Shende, Chief
UNEP DTIE's Energy & OzonAction Unit, France

Mr. Halvart Köppen, Training Officer
UNEP DTIE's OzonAction Programme, France

The document was researched and written by:

Mr. Niels Juul Busch, Consultant
RAMBOLL Environment, Denmark

The quality review was undertaken by:

Dr. L.R. Berkeley-Schultz
Industrial and Environmental Consultant, Spain

Dr. Denis Clodic
Centre d'Énergétique, École des Mines de Paris, France
Member of the UNEP TOC for Refrigeration, Air-Conditioning and Heat Pumps

Mr. Ronald Verch
Instructor for UNEP Training Programmes on Good Practices in Refrigeration and Recovery & Recycling, British Columbia Institute of Technology, Canada

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Foreword

Use of CFCs

Most CFCs in developing countries are used in refrigeration, and the majority of the consumption within the refrigeration sector is for maintenance and servicing of CFC-containing equipment. Poor servicing procedures and the absence of refrigerant recovery and recycling often lead to the emission of a significant proportion of the refrigerants directly into the atmosphere.

Ozone layer protection

The ozone layer, high in the Earth's stratosphere, is vital to life on the planet's surface. It acts as a shield and prevents the harmful UV-radiation from reaching the Earth. In the 1970s scientists discovered that the released CFCs damage the ozone layer. In September 1987, nations around the world concerned about the depletion of the ozone layer signed the Montreal Protocol on Substances that Deplete the Ozone Layer, a landmark agreement that identified the major ozone-depleting substances (ODS) and established a timetable for the reduction and eventual elimination of their use world-wide.

Phase-out schedule

The consumption of CFCs has been phased out in developed countries by the beginning of 1996, except the about 10,000 tons required for essential uses. Developing countries are given a grace period, and from July 1999 their first control measure - the freeze on the production and consumption of Annex A CFCs at 1995-97 levels - has been effective. Total phase-out of CFCs in these countries is to be achieved by 2010.

Phase-out strategy

The phase-out of CFCs in the refrigeration sector in developing countries is best achieved through an integrated national strategy that addresses the key technical and policy issues – a 'Refrigerant Management Plan'. Such a plan includes – and prioritises – activities such as public awareness campaigns, training and certification of service technicians, conversion projects, establishment of refrigerant recovery and recycling (R&R) systems and suitable policy and regulatory support frameworks, improvement of data collection systems and control and monitoring of CFC consumption.

The supply of R&R equipment and the establishment of R&R systems alone do not ensure the successful operation of such systems. They must be supported by regulatory structures involving command and control tools as well as incentives for the end-users.

Objective

The objective of these Guidelines is to help developing country governments and industry design and establish such R&R systems, and to operate them efficiently. The establishment of such R&R systems represents a cost-effective step in reducing the consumption of virgin CFC refrigerants without major capital investment, and in allowing existing CFC-based equipment to run until the end of its economic life.

Further publications

These Guidelines are part of a series of self-help guides produced by UNEP's OzonAction Programme under the Multilateral Fund, in order to assist developing countries to implement the Montreal Protocol. They should be read and followed in conjunction with other similar publications prepared by the OzonAction Programme, specifically:

- ODS Import/Export Licensing Systems
  Policy Design and Setting Up of Legislation [12]
- Guidebook on Implementation of Codes of Good Practices - Refrigeration Sector [13]
- Training Manual on Good Practices in Refrigeration [3]
- Training Manual on Chillers and Refrigerant Management [4].

More information can be found on the World Wide Web at:
http://www.unepie.org/ozonAction.html.

Mr. Rajendra Shende, Chief
UNEP DTIE, Energy & OzonAction Unit

Keep in mind...

Much of the Montreal Protocol's success can be attributed to its ability to evolve over time to reflect the latest environmental information and technological and scientific developments. Through this dynamic process, significant progress has been achieved globally in protecting the ozone layer.

As a key agency involved in the implementation of the Montreal Protocol, UNEP DTIE's OzonAction Programme promotes knowledge management in ozone layer protection through collective learning. There is much that we can learn from one another in adopting the guidelines for recovery & recycling of ozone depleting substances.

The guidelines for recovery & recycling systems are neither comprehensive nor exhaustive. They are prepared based on limited experience in developed and developing countries. As more experience is gained, by the world community, the guidelines will become more and more extensive and effective.

We encourage you to share your experiences with the OzonAction Programme so that we can inform others involved in this issue about the lessons you learned. Send us an e-mail, fax or letter about your experiences and successes in recycling. We will consider it as an important part of collective learning.

Based on the feedback and information received, UNEP will update these guidelines on a periodic basis to reflect the latest developments. We will also disseminate your experiences through a variety of channels, including the OzonAction Newsletter and the OzonAction Programme's website (www.uneptie.org/ozonaction.html). If we use the information you provide, we will send you a free copy of one of our videos, publications, posters or CD-ROMs as thanks for your cooperation.

So take a pen and write to us. Let us learn collectively to protect the ozone