



UNEP DTIE OzonAction Programme under the Multilateral Fund



AVOIDING A DOUBLE PHASE OUT: ALTERNATIVE TECHNOLOGIES TO HCFCs IN REFRIGERATION AND AIR CONDITIONING

INFORMATION RELEASE - New Publication June 1999

The UNEP DTIE OzonAction Programme under the Multilateral Fund has released a case study booklet, ***Avoiding a Double Phase Out: Alternative Technologies to HCFCs in Refrigeration and Air Conditioning***, that informs developing countries about how companies and organizations in other countries have successfully identified, evaluated and adopted refrigerants that do not rely on ozone depleting HCFCs. The case studies in this booklet demonstrate how developing countries can save costs and protect the environment by selecting non-HCFC alternatives.

HCFCs (hydrochlorofluorocarbons) have become widely used in refrigeration, air conditioning, foam blowing, fire extinguishing and other industrial applications throughout the world and are even used as substitutes for CFCs (chlorofluorocarbons). However, since HCFCs have a positive ozone depletion potential, they are considered to be "transitional" chemicals that will also be phased out under the Montreal Protocol. Under that treaty, developing countries ("Article 5 countries") have committed to freeze their consumption and production of CFCs by 1 July 1999 and phase them out by January 2010. Additionally, Article 5 countries have agreed to freeze their consumption and production of HCFCs by January 2016 and totally phase them out by January 2040.

Meeting the CFC freeze requires the implementation of refrigerant management plans and the adoption of non-CFC technologies. The technology choices that companies in Article 5 countries make now to meet the CFC freeze has a direct bearing on their ability to phase out of HCFCs later. This case study booklet is designed to encourage enterprises to avoid replacing CFCs with HCFCs by selecting non-HCFC alternatives whenever possible, since this path leads to the requirement to phase out twice, i.e. replacement of CFCs and then replacement of HCFCs.

Avoiding a Double Phase Out provides: background about the need to phase out HCFCs and other ozone depleting substances (ODS), explains the Multilateral Fund's "presumption against HCFCs" when considering investment projects, provides an overview of commercially-available non-HCFC refrigerants and eight case studies detailing the experience of companies and suppliers with non-HCFC technologies. Eight case studies address retail refrigeration, domestic refrigeration, fishery product conditioning and chiller applications. They demonstrate the successful use of propane, R-124a, R-404A, 407 series and R-502 refrigerants. Each case study includes background about the company, a description of the alternative technology, observations about the applicability to developing countries and contacts for more information. Annexes include Decisions about HCFCs taken by the Parties to the Montreal Protocol and the Executive Committee, Examples of non-HCFC refrigeration sector projects approved by the Executive Committee, Refrigerant data, Selected references, Glossary and contacts for further information.

This publication is part of the information exchange services provided by UNEP to developing countries to help them meet their obligations under the Montreal Protocol. The OzonAction Programme also provides other clearinghouse services (Training & Networking of ODS Officers) as well as assistance with the development of national ODS phase out strategies (Country Programmes) and Institutional Strengthening support. For more information, contact: UNEP DTIE OzonAction Programme, Tour Mirabeau, 39-43 quai Andre Citroen, Paris 75739 cedex 15, France or Tel: (33.1) 44.37.14.50, Fax: (33.1)44.37.14.74, E-mail: rmshende@unep.fr, Web: <http://www.uneptie.org/ozone/home.html>.

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To Order: *Avoiding a Double Phase Out: Alternative Technologies to HCFCs in Refrigeration and Air Conditioning* 300 FF/US\$ 50

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About the UNEP Division of Technology, Industry and Economics

The mission of the UNEP Division of Technology, Industry and Economics is to help decision-makers in government, local authorities and industry develop and adopt policies and practices that: are cleaner and safer; make efficient use of natural resources; ensure adequate management of chemicals; incorporate environmental costs; reduce pollution and risks for humans and the environment.

The UNEP Division of Technology, Industry and Economics (UNEP DTIE) located in Paris, is composed of one centre and four units: The International Environmental Technology Centre (Osaka), which promotes the adoption and use of environmentally sound technologies with a focus on the environmental management of cities and freshwater basins, in developing countries and countries in transition. Production and Consumption (Paris), which fosters the development of cleaner and safer production and consumption patterns that lead to increased efficiency in the use of natural resources and reductions in pollution. Chemicals (Geneva), which promotes sustainable development by catalyzing global actions and building national capacities for the sound management of chemicals and the improvement of chemical safety world-wide, with a priority on Persistent Organic Pollutants (POPs) and Prior Informed Consent (PIC, jointly with FAO). Energy and OzonAction (Paris), which supports the phase-out of ozone depleting substances in developing countries and countries with economies in transition and promotes good management practices and use of energy, with a focus on atmospheric impacts. The UNEP/RISØ Collaborating Centre on Energy and Environment supports the work of the Unit. Economics and Trade (Geneva), which promotes the use and application of assessment and incentive tools for environmental policy and helps improve the understanding of linkages between trade and environment and the role of financial institutions in promoting sustainable development.

UNEP DTIE activities focus on raising awareness, improving the transfer of information, building capacity, fostering technology cooperation, partnerships and transfer, improving understanding of environmental impacts of trade issues, promoting integration of environmental considerations into economic policies and catalyzing global chemical safety.

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