How the Hotel and Tourism Industry Can Protect the Ozone Layer

United Nations Environment Programme
Industry and Environment
OzonAction and Tourism Programmes

Multilateral Fund for the Implementation
of the Montreal Protocol

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ACRONYMS

CFC	chlorofluorocarbon
GWP	Global Warming Potential
HCFC	hydrochlorofluorocarbon
HFC	hydrofluorocarbon
LVC	low-volume ODS consuming countries
NOU	National Ozone Unit
ODP	Ozone Depletion Potential
ODS	Ozone Depleting Substance
UV	Ultraviolet

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FOREWORD

Emissions of man-made chemicals collectively known as ozone-depleting substances (ODS) are depleting the stratospheric ozone layer which protects life on Earth from harmful ultraviolet radiation from the sun. Depletion of the ozone layer is likely to affect food production, health and ecosystems worldwide.

The world's nations have taken action to solve the problem through the Montreal Protocol on Substances that Deplete the Ozone Layer (1987), an international treaty that requires countries to phase out their production and consumption of chlorofluorocarbons (CFCs) and other ODS according to precise deadlines. A Multilateral Fund was established under the Protocol to provide technical and financial assistance to help developing countries phase out ODS.

Hotels and the tourism industry use ODS in refrigerators in kitchens and mini-bars, air conditioning in guest rooms and public areas, aerosol sprays in cleaning products, fire-protection equipment, and foam mattresses. Since your establishment uses these chemicals, you and your staff have to be part of the solution.

The tourism and hotel industry is realizing that a healthy environment means good business. Many hotels and holiday centres are carrying out environmental management programmes and reaping the benefits. However, until now reducing the use of ODS has been given little attention in this sector. This guide is intended to fill that gap by:

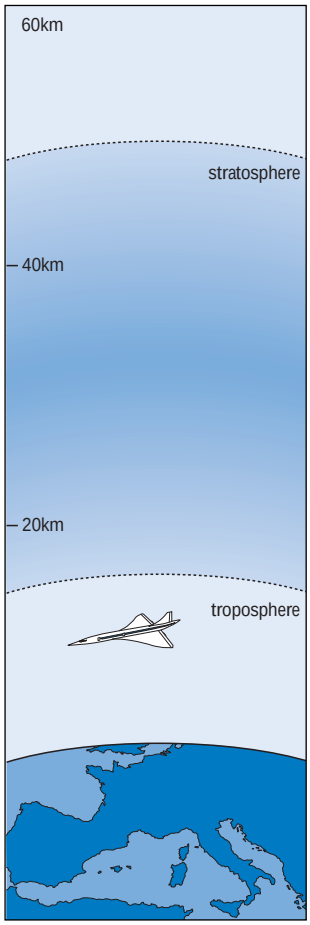
- explaining why you should be concerned about ozone depletion
- outlining how you should approach the problem
- providing information on how the use of ODS can be reduced and avoided
- providing examples of good practice to demonstrate how some tourism facilities have taken action to protect the ozone layer.

Technologies and chemicals that do not destroy the ozone layer are now available worldwide, and good servicing practices and other skills exist to reduce ODS emissions. Switching to new technologies and acquiring proper training can help your business improve operating efficacy, reduce costs in the medium term, and enhance its market image. Integrating technologies that do not deplete the ozone layer into facilities still at the planning and construction stage can save considerable time and money later on.

This guide is written for managers and staff in the hotel and tourism industry. Though the guide emphasizes medium and smaller units in developing countries, it can equally be used by facilities of all sizes in all countries, developing and developed. In addition, the guide will be of interest to all commercial and residential establishments, including accommodation units, shopping centres, visitor centres, office buildings and sports arenas. The guide also provides background information which is suitable for property designers and developers.

This guide was produced by UNEP IE's OzonAction Programme under the Multilateral Fund, as part of its information exchange services. The guide was developed in cooperation with the UNEP IE Tourism Programme, which has already published two titles on environmental management in the tourism sector.

PART I: ABOUT THE OZONE LAYER



Most atmospheric ozone is found in the stratosphere 12-50 km above the Earth

What is the ozone layer?

Ozone is naturally occurring gas, consisting of three oxygen atoms. Nearly 90 percent of all ozone is found in the upper atmosphere (or stratosphere), 12-50 km above the Earth's surface. This is referred to as the 'ozone layer'.

Together with ozone in the lower parts of the atmosphere, the ozone layer acts as a giant sunshade, absorbing the harmful wavelengths of the sun's ultraviolet (UV) radiation and preventing it from reaching the Earth's surface. Without ozone life could not have developed and flourished on the Earth.

Why is the ozone layer under threat?

When released into the air, some man-made chemicals containing chlorine and bromine eventually migrate into higher regions of the atmosphere, including the stratosphere. Though these chemicals are stable in the lower atmosphere, they are broken down into highly reactive forms of chlorine and bromine in the stratosphere by the high levels of UV solar radiation. These chemicals then take part in a series of chain reactions leading to ozone depletion (see illustration opposite).

Which chemicals destroy the ozone layer?

Chlorofluorocarbons (CFCs), the most widely-known ozone-destroying chemicals, were first synthesized in 1928. Because of their inflammability and low toxicity, they were used in applications as diverse as refrigerants in refrigerators and air conditioners, propellants in aerosol spray cans, blowing agents in the manufacture of foams, and cleaning agents for electronic equipment.

What is the difference between the ozone layer and ground level ozone?

Hydrochlorofluorocarbons (HCFCs) were developed as substitutes for CFC refrigerants and blowing agents. Though less destructive than CFCs, the ozone-depleting potential (ODP) of these chemicals are too high to allow