



Room 2006, 20th floor, Murray Building, Garden Road, Central, Hong Kong
Tel: 848 2551 Fax: 845 3489
香港中環花園道美利大廈20樓2006室 • 電話: 848 2551 傳真機: 845 3489

ACE Paper 47/96
for information

Control of Ozone Depleting Substances in Hong Kong – an Update

Introduction

This paper summarizes the current status of the Montreal Protocol phase out programmes for ozone depleting substances (ODS) and provides an update on the situation in implementing these programmes in Hong Kong.

Background

2. Depletion of the ozone layer allows more UV-B radiation to reach the earth's surface. This may increase the chance of cataracts and skin cancers in human beings and may cause disturbance to ecosystems. In 1995, the ozone hole over Antarctica was found twice as big as that measured in 1993 and 1994. Record ozone depletion over the northern hemisphere had also been reached.

The Montreal Protocol

3. On the basis of the Vienna Convention for the Protection of the Ozone Layer, 24 countries negotiated and signed the Montreal Protocol on Substances that Deplete the Ozone Layer in September 1987.

4. The Protocol is reviewed periodically and revised, as necessary, to include new chemicals for control and to adjust the time schedule for phasing out ODS. The Protocol was amended in the London meeting in 1990, in the Copenhagen meeting in 1992, and in the Vienna meeting in 1995. The current control schedule for ODS under the Montreal Protocol as amended after the Vienna meeting is shown in Appendix I.

Hong Kong's Position

5. To control ODS, Hong Kong introduced the Ozone Layer Protection Ordinance (the Ordinance) in 1989, to fulfill its international obligations under the Montreal Protocol. The Ordinance prohibits local manufacturing of ODS, and restricts the import and export of these substances by licensing and quota controls.

6. The Ordinance now covers the control of halons, 15 chlorofluorocarbons (CFCs), carbon tetrachloride, 1,1,1-trichloroethane, 34 hydrobromofluorocarbons (HBFCs), methyl bromide and 34 hydrochlorofluorocarbons (HCFCs). Import of halons for local consumption was banned as from 1 January 1994. Import of CFCs, carbon tetrachloride, 1,1,1-trichloroethane and HBFCs for local consumption was also banned as from 1 January 1996. Import of HCFCs is being controlled under a licensing and quota system, and import of methyl bromide for local consumption is restricted to use in quarantine and pre-shipment treatment of goods only.

7. The controls have successfully reduced the import of ODS for local consumption by over 85% since they were first introduced in 1989. The chart in Appendix II shows the reducing trend of ODS imported for consumption in Hong Kong.

8. Two sets of regulations were enacted to provide additional control. Firstly, the Ozone Layer Protection (Controlled Refrigerants) Regulation, which came into operation on 1st January 1994, requires CFC refrigerant be recovered from central air-conditioning plants and motor vehicle air-conditioners. It also prohibits venting of CFC refrigerant to the atmosphere during servicing of the air-conditioning equipment.

9. Secondly, the Ozone Layer Protection (Products Containing Scheduled Substances) (Import Banning) Regulation prohibits the import of products containing ODS from non-party countries as required by the Montreal Protocol. On 23 October 1995, members were consulted on an amendment to the regulation to extend the prohibition on the import of halon fire extinguishers to parties of the protocol i.e. all countries. We expect the amendment to come into force on 2 December 1996.

Uses of ODS in Hong Kong

10. The majority of the ODS in Hong Kong are being used as refrigerants in air conditioning systems in buildings or in motor vehicles. The most popular ones are HCFC-22, CFC-12, and CFC-11. Other uses of ODS are as solvents (CFC-113, carbon tetra-

chloride, 1,1,1-trichloroethane, and HCFC-141b); as fire extinguishing agents (Halon 1301 and Halon 1211); and as pesticides in quarantine and pre-shipment fumigation of goods (methyl bromide).

Effects of Local Regulatory Control

11. For the air-conditioning and refrigeration industries, the regulatory controls have driven the industry to adopt alternative non-CFC refrigerants such as HFC-134a, HCFC-123, and blends of HCFC/HFC.
12. The fire services industry has found alternatives to Halon 1301 (BTM) which include CO₂, powders, HFCs, HCFC blends, foams, and inert gas. Halon 1211 (BCF) portable fire extinguishers upon renewal are replaced with foam, dry powder, CO₂, or water types.
13. The electronic industry has either switched from CFC to non-CFC substitutes or adopted alternative processes.
14. Other uses also have found suitable replacements. Methyl chloride is used as substitutes for CFC-11 in the foam manufacturing. Hydrocarbons are used to substitute CFC-12 for the manufacture of insulating foams such as food containers/cups, and for use as air propellant in aerosol products.

Summary

15. Hong Kong has fully fulfilled its international obligation under the Montreal Protocol, and successfully implemented regulatory controls on ODS. The local industry and users have positively responded to these controls and smoothly reduced their reliance on these substances.
16. Members are requested to note this update on the progress in the control of ozone depleting substances in Hong Kong.

**Control Schedule under Montreal Protocol
(As Amended after Vienna Meeting in December 1995)**

Limits on Retained Import⁽¹⁾

Period	Level not to be exceeded in percentage of base year level ⁽²⁾ .							
	CFCs	Halons	Other CFCs ⁽³⁾	Carbon Tetrachloride	1,1,1-trichloroethane	HCFC	HBFC	Methyl Bromide
1.7.1989 - 30. 6.1990	100%	-	-	-	-	-	-	-
1.7.1991 - 31.12.1991	150%	-	-	-	-	-	-	-
1.1.1992 - 31.12.1992		100%	-	-	-	-	-	-
1.1.1993 - 31.12.1993	100%	100%	80%	-	100%	-	-	-
1.1.1994 - 31.12.1994	25%	0%	25%	-	50%	-	-	-
1.1.1995 - 31.12.1995	25%	0%	25%	15%	50%	-	-	100%
1.1.1996 - 31.12.1996	0%	0%	0%	0%	0%	100%	0%	100%
1.1.1997 - 31.12.2000	0%	0%	0%	0%	0%	100%	0%	100%
1.1.2001 - 31.12.2003	0%	0%	0%	0%	0%	100%	0%	75%
1.1.2004 - 31.12.2004	0%	0%	0%	0%	0%	65%	0%	75%
1.1.2005 - 31.12.2009	0%	0%	0%	0%	0%	65%	0%	50%
1.1.2010 - 31.12.2014	0%	0%	0%	0%	0%	35%	0%	0%
1.1.2015 - 31.12.2019	0%	0%	0%	0%	0%	10%	0%	0%
1.1.2020 - 31.12.2029	0%	0%	0%	0%	0%	0.5% ⁽⁴⁾	0%	0%
1.1.2030 - 31.12.2030 & each year thereafter	0%	0%	0%	0%	0%	0%	0%	0%

Remark

(1) Retained import is the amount of substances imported for consumption in Hong Kong and does not include locally recycled ODS.

(2) Base year for CFCs and halons is 1986.

Base year for other CFCs, 1,1,1-trichloroethane, carbon tetrachloride and HBFC is 1989.

Base year for HCFCs is 1989 plus 2.8% of the calculated level of 1989 CFC use.

Base year for methyl bromide is 1991.

(3) "Other CFCs" are 13, 111, 112, 211, 212, 213, 214, 215, 216 and 217.

(4) Restricted to the servicing of existing refrigeration and air-conditioning equipment only.

Weighted Quantity
(tonnes)

Retained Import of Ozone Depleting Substances in Hong Kong

