ADVISORY COUNCIL ON THE ENVIORNMENT

(21.2.1994)

(ACE 7/94)
(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 and provides an update on the situation in Hong Kong for the information of members.

Background :

2. Recent scientific research shows that the depletion of the ozone layer in the stratosphere as a result of the release of certain man-made chemicals is becoming more and more serious. The ozone layer shields off harmful UV radiation from reaching the earth's surface. Increased UV radiation results in increases in the number of cataracts and skin cancers in human beings and disturbance to eco-system. According to findings of the World Meteorological Organisation, stratospheric ozone values in 1992 were at a record low over the Antartica. Severe decline in ozone concentrations was also observed at high and mid latitudes in both hemispheres.

The Montreal Protocol :

3. The Montreal Protocol on substances that deplete the ozone layer is an international agreement which aims at phasing out ozone depleting substances (ODS). The original Protocol sets a time schedule to phase out 5 CFCs and 3 halons as soon as possible.

4. The Protocol is reviewed every two years and revised, as seen necessary in the light of new information, to include new chemicals for control, and adjust the time schedule for phasing out ODS. The Protocol was amended in the London meeting in 1990, and in the Copenhagen meeting in 1992.

5. The London amendment added new chemicals to be controlled, namely carbon tetrachloride, 1,1,1-trichloroethane, and 10 other CFCs.

6. The Copenhagen amendment added HCFCs, HBFCs and methyl bromide to the list of controlled substances. It also significantly expedited the phase out time schedule for ODS.

7. The control programme for ODS under the Montreal Protocol as amended after the Copenhagen meeting is shown in Appendix 1. For ease of reading, it is also shown graphically in Appendix 1(a).

8. The detail action plan to meet the requirements of the Copenhagen amendment is shown in Appendix 2.

Hong Kong's Position

9. It is our current policy to comply with the phase out programme of ODS which is reviewed and amended regularly. This ensures that we maintain our international image on environmental protection and also serves to protect Hong Kong from trade sanctions on ozone depleting substances which are applicable to non-parties.

10. Through a licensing and quota system administered by the EPD under the Ozone Layer Protection Ordinance, Hong Kong has successfully reduced the retained import of ODS by over 50% since controls were first introduced in 1989. A graph which shows the reducing trend of consumption of ODS is at Appendix 3.

11. The Ozone Layer Protection (Products Containing Scheduled Substances) (Import Banning) Regulation was enacted on 27th May 1993 to prohibit the import of products containing CFCs and halons from non-parties as required by the Montreal Protocol.

12. To cope with the phase out programme for CFCs, the EPD has been encouraging recovery and recycling of CFC refrigerants. To this end, the Ozone Layer Protection (Controlled Refrigerants) Regulation was made in May 1993, and came into force on 1.1.94. The Regulation makes it mandatory to recover CFC refrigerants with approved equipment from motor vehicle air-conditioners and central air conditioning plants with more than 50 kg of refrigerant charge. Venting of CFC to the atmosphere during servicing of the equipment is prohibited. Recovery and recycling facilities are now commercially available to users of air-conditioners, and approved equipment for these purposes were gazetted on 31.12.93.

13. There is no large scale commercial recycling facility for halons in Hong Kong, although several companies have

expressed interest in setting up such a facility. However, there are small recovering units operated by individual companies, mainly fire services contractors and power companies, for recovering BCF and BTM during hydraulic tests of cylinders.

14. The EPD is conducting a survey of major users of halons with a view to setting up a Halon Information Centre. The objective of the survey is to allow existing halons, which will become obsolete due to system replacement, to be reused in existing systems which cannot be replaced in the near future. The centre will provide the name of owner, type and quantity of retired halons which will be made available for re-use.

15. Through circular letters, press releases, provision of general information, and seminars organised jointly by the EPD with professional bodies such as the HKIE, ASHRAE & HKPC, existing users have been advised of the current phase out programme, and the availability of alternative chemicals, equipment and processes.

Impact on Local Industries :

16. For halons, BCF(1211) is normally used in portable fire extinguishers, and BTM (1301) is used mainly in fixed installations. Import of halons into Hong Kong was banned with effect from 1 January 1994. Unfortunately there are no "drop in" substitutes for halons. A new chemical, FM-200 has recently been introduced into the market, but retrofitting of the existing equipment in order to use it is necessary.

17. It is anticipated that there may be difficulties in refilling existing halon systems in the future. Major halon users, including HK Government, the power companies, the telephone company, and the MTRC have plans to replace their non essential halon systems so that retired halons can be recovered and, if necessary, reused to backup those systems which cannot be replaced in the near future. The Halon Information Centre described in paragraph 14 above will also facilitate the transer of retired halons to essential users.

18. CFCs are mainly used as refrigerants (45%), solvents (39%), and as blowing agents (16%). For the electronics industry and the foam plastic manufacturing industry, technology is now available to phase out the use of CFCs in most of their manufacturing processes. Because of the overseas market demand for products which do not contain CFC or are not made with CFC, local manufacturers have taken the initiative to use CFC substitutes or processes.

19. For the air conditioning and refrigerating industry, substitute refrigerants, such as HFC-134a, and HCFC-123 are available in the market, but costly retrofitting of the equipment is necessary. With the exception of the Government and some large companies, most owners of large air conditioning plant have adopted a "wait and see" attitude towards retrofitting or replacing their plant. If these owners do not prepare adequate retrofitting or replacement plans for their CFC chillers, or for the recovery and recycling of CFCs for re-use, they will be faced with shortage of CFC supply, since imports of CFC will be reduced by 75% in 1994, and completely banned in 1996. The EPD will continue to urge the air conditioning industry to advance preparations for the phasing out of CFCs.

20. Carbon tetrachloride is not much used in Hong Kong, due largely to its high toxicity, and no problems with its phase out are foreseen. The solvent, 1,1,1 trichloroethane, is widely used as a solvent by the electronics, textile, and metal finishing industries. There are substitute cleaning agents for this chemical and it is not expected that there will be any significant impact on industry when the chemical is completely banned in 1996.

21. Members are requested to note this general update on the control of ozone depleting substances in Hong Kong.

Environmental Protection Department
February 1994