

For discussion on  
24 November 2008

**LEGISLATIVE COUNCIL  
PANEL ON ENVIRONMENTAL AFFAIRS**

**Enhancing the Control of Ozone Depleting Substances**

**PURPOSE**

This paper seeks Members' advice on the proposal to enhance the control of the ozone depleting substances (ODS) for fulfilling the additional international obligations of the Montreal Protocol on Substances that Deplete the Ozone Layer (Montreal Protocol) on ozone layer protection.

**THE PROPOSAL**

2. We propose to amend the Ozone Layer Protection (Products Containing Scheduled Substances) (Import Banning) Regulation (Cap. 403C) to –

- (a) ban the import of products using hydrochlorofluorocarbons (HCFC) according to the following schedule –
  - (i) 1 January 2010: all products using HCFC-22, other than the window-type air conditioners;
  - (ii) 1 January 2012: all products using HCFC-22;
  - (iii) 1 January 2015: all products using HCFCs, other than HCFC-123; and
  - (iv) 1 January 2020: all products using HCFCs.
- (b) ban the import of metered dose inhalers (MDI) and other products containing chlorofluorocarbon (CFC) by 1 January 2010.

3. We also propose to amend the Schedule to the Ozone Layer Protection Ordinance (OLPO) to, with effect from the date of gazette –

- (a) include bromochloromethane (BCM) as one of the scheduled substances; and
- (b) make it clear that each of the substances listed in this Schedule includes their respective isomers.

## JUSTIFICATIONS

4. Above the earth in the atmosphere is a layer of ozone, which is a special form of oxygen. This “ozone layer” protects all life on earth against harmful ultraviolet radiation. In the 1970s, scientists found that there was a large-scale depletion of the ozone layer, resulting in what is commonly referred to as “ozone hole” in the atmosphere.

5. To ensure recovery of the ozone layer, the international community has joined hands under the Montreal Protocol that was signed in September 1987 to virtually eliminate according to certain timelines the production and use of nearly 100 chemicals that have ozone depleting properties. The Parties to the Montreal Protocol meet regularly to help accelerate the restoration of the ozone layer.

6. The Montreal Protocol was extended to Hong Kong by the United Kingdom in 1987 to require the observation of the requirements for the Non-Article 5 Parties. After the re-unification in 1997, under the Memorandum of 6 June 1997 given to the UN Secretariat by the Ministry of Foreign Affairs of the People’s Central Government, the Hong Kong Special Administration Region will continue complying with any of these requirements. With the support of the Legislative Council, we have enacted the OLPO and its subsidiary legislations to control the import and export of ODS. Hence, through a quota and licensing system, we have already banned the import for local consumption of ODS including CFCs, halons, carbon tetrachloride, methyl chloroform, hydrobromofluorocarbons according to phasing-out schedules stipulated by the Montreal Protocol for developed parties. The only type of ODS that can still be imported to Hong Kong for local consumption is HCFCs.

### **Banning of products using HCFCs**

7. At the 19<sup>th</sup> Meeting of Parties to the Montreal Protocol held in September 2007, Parties reached an agreement to accelerate the phasing out of HCFCs for the Non-Article 5 Parties – to curtail by 2010 the consumption of HCFCs by 75% of the baseline level of 1989 instead of the original 65%; and to advance the completion of the phasing out from 2030 to 2020.

8. The enhanced HCFC reduction target for 2010 will see a tightening of the ceiling for local HCFC consumption from 48.6 ODP-tonnes <sup>[1]</sup> to 34.7 ODP-tonnes. In 2007, the local consumption of HCFCs is about 51.1 ODP-tonnes. To meet the enhanced reduction target, the local HCFC consumption will have to be further reduced by 16.4 ODP-tonnes. The local consumption of HCFCs in recent years and the accelerated phasing out requirement are depicted in the graph at **Annex I**.

---

<sup>[1]</sup> ODP-tonnes means the tonnage adjusted to the ozone depleting potentials (ODP) of the concerned HCFC. For example, for HCFC-22, as the ODP is 0.055, 1 tonne HCFC-22 equals to 0.055 ODP-tonne.

9. In Hong Kong, virtually all HCFCs are used as refrigerants. To ensure full compliance with the accelerated phasing out programme for HCFCs, we need to further reduce the demand for HCFCs by banning the import of refrigeration, air conditioning and other products using HCFCs as refrigerants.

10. Among HCFCs, HCFC-22 accounts for about 98.3% of the local HCFC consumption. Its non-ozone depleting alternatives are readily available. To maximize the reduction effectiveness, products containing HCFC-22 should be the first to be phased out. Among HCFC-22-containing products, suppliers need more time to prepare for sourcing and importing HCFC-free window type air conditioners. We thus propose to ban the import of them from 1 January 2012 whereas the other HCFC-22 -containing products from 1 January 2010 – two years earlier.

11. As for products containing other types of HCFCs, we propose to ban the import of them from 1 January 2015 except those containing HCFC-123, which we propose to ban from 1 January 2020. At present, HCFC-123 alone only accounts for 0.3% of the local HCFC consumption. We propose a longer phasing out period for HCFC-123 because it has very low ozone depleting and global warming potentials but high cooling performance.

12. While there is a general declining trend of HCFC consumption in recent year, there is a need for an extra driving force to reduce further the local HCFC consumption to meet with the latest requirements under Montreal Protocol. Similar phasing out plans have also been made in other developed economies, e.g. European Union (EU), Canada and USA, which are summarized at **Annex II**.

### **Banning of MDIs and products containing CFC**

13. MDIs are small, pressurized aerosol devices that deliver a measured dose of an aerosolized drug into a patient's airway for inhalation into the lungs for the treatment of asthma and chronic obstructive pulmonary disease. They are required to register under the Pharmacy and Poisons Regulations before they can be put on the local market.

14. At present, CFC-containing MDIs for medical treatments are regarded as “essential use” and exempted from the import prohibition of CFC-containing products. However, in view of the availability of the economically and technically feasible non-CFC alternatives or substitutes, the 11<sup>th</sup> and the 12<sup>th</sup> meetings of the Meeting of the Parties to the Montreal Protocol held in 1999 and 2000, respectively asked Non-Article 5 Parties to develop and implement a strategy for the management of CFCs, including options for eventual elimination of the use of CFC-containing MDIs.

15. In response to the above requirement, we, after consultation with the stakeholders including medical suppliers, health and medical professionals, have made it a target since 2003 to phase out all CFC-containing MDIs by 1 January 2010. In this connection, the Hospital Authority (HA) and Department of Health (DH) have

also launched from 2004 a voluntary programme to phase out CFC-containing MDIs.

16. The voluntary phasing out programme of the HA and DH has borne fruits. At present, more than 40 CFC-free MDI models, accounting for about 80% of all MDI models, are available on local market. Moreover, in 2007, the consumption of CFC-free dose amounted to 87% of the total. The rest will also be phased out by 2010. Many advanced countries such as Canada, UK, USA, Australia and Japan have implemented statutory programmes (which are summarized at **Annex II**) to phase out all CFC-containing MDIs by 2010.

17. Given the need to join the international efforts to eliminate ultimately the use of CFC in MDIs and the practicability to do so, we consider it appropriate to ban the manufacture and import of CFC-containing MDIs from 1 January 2010.

### **Extending the Ban to other CFC-containing Products**

18. We would also like to take this opportunity to amend the regulations to extend the banning of the import of products containing CFC from countries not being a Party to the Montreal Protocol to all countries for the sake of completeness.

### **Amendment of the Schedule to the OLPO**

19. The 11<sup>th</sup> Meeting of the Parties to the Montreal Protocol decided to add BCM, which is mainly used as a fire extinguisher, as a new ODS to be controlled under the Montreal Protocol. Although BCM has not been produced, used or imported to the local market, we would like to take this opportunity to amend the existing schedule to OLPO to include it as a scheduled substance.

20. In addition, for clarity, we also propose to specify explicitly in the schedule that each of the controlled substances include its isomers.

## **IMPLICATIONS**

### ***Financial and Civil Service Implications***

21. The proposal will be implemented with the existing resources. We would review the resource requirements after it is fully implemented.

### ***Economic Implications***

22. Failure to achieve the accelerated phasing out of HCFCs and comply fully

with the requirements of the Montreal Protocol will tarnish our international image on global environmental matters and lead to the possibility of sanction under the Protocol. The resulting economic loss could be significant.

23. The proposed banning of the HCFC-containing products should not have any significant impact on the industrial and commercial sectors as HCFC-free products are available at comparable prices. For domestic appliances, the prices for HCFC-free air conditioners on the local market are about 10 to 25% higher than those using HCFC-22. However, the price difference is not only due to a switch of refrigerants but also to enhanced features such as providing heating capability and higher efficiency filter. When more HCFC-free air conditioners are available in the coming years, the price difference would reduce.

24. The banning of CFC-containing MDI would not pose any problem or adverse economic impact to the local market as the suppliers have been making good preparations for the proposed ban. CFC-free MDIs have already taken up a market share of over 80% and the rest will be entirely replaced by the time the proposed ban is in force.

### ***Environmental Implications***

25. The proposal helps us join the international efforts to restore as soon as reasonably practicable the ozone layer which is essential in protecting the life on earth against harmful ultraviolet radiation. Assuming global compliance with the Montreal Protocol, scientists have estimated that substantial recovery of the ozone layer would be expected near the middle of this century.

### **CONSULTATION**

26. Soon after the 19<sup>th</sup> Meeting of Parties to the Montreal Protocol was adopted at the end of 2007, we had advised the relevant trades the accelerated phasing out schedule for HCFCs. In connection of this proposal, we have recently consulted the Air Conditioning and Refrigeration Association of Hong Kong, Hong Kong & Kowloon Electrical Appliances Merchants Association Ltd, major air conditioner suppliers, Hong Kong Association of Property Management Companies Limited, Real Estate Developers Association of Hong Kong and professional bodies including Hong Kong Institution of Engineers and American Society of Heating, Refrigerating and Air-Conditioning Engineers, on our proposed banning of products of HCFC. They have advised us that they have no problem complying with the proposal.

27. As for the proposal related to CFC-containing MDIs, we consulted in April 2003 the concerned product suppliers and the public health care sector and medical professional associations, including the HA, DH, Hong Kong Medical Association, Hong Kong Association of Pharmaceutical Industry, Pharmaceutical Society of Hong Kong, Hong Kong Asthma Society, Hong Kong Lung Foundation and Society for

Community Organisation – Patients Rights Association, before we set the phasing out target of 2010. Since then, we have kept MDIs suppliers abreast of the development on the banning proposal. In August 2008, the HA, DH and MDIs suppliers had been further advised of the proposed legislative amendment to ban these products. They have no objection to the proposal.

28. We have consulted the Advisory Council on the Environment and their support to the proposal has been given in November 2008.

## **WAY FORWARD**

29. Subject to Members' views, we will prepare the necessary amendments to the Regulations with a view to introducing the amendment regulations into the Legislative Council in mid-2009 for implementation on 1 January 2010.

## **ADVICE SOUGHT**

30. Members' comments are sought on the proposal set out in paragraphs 2 and 3 above.

**Environmental Protection Department  
November 2008**

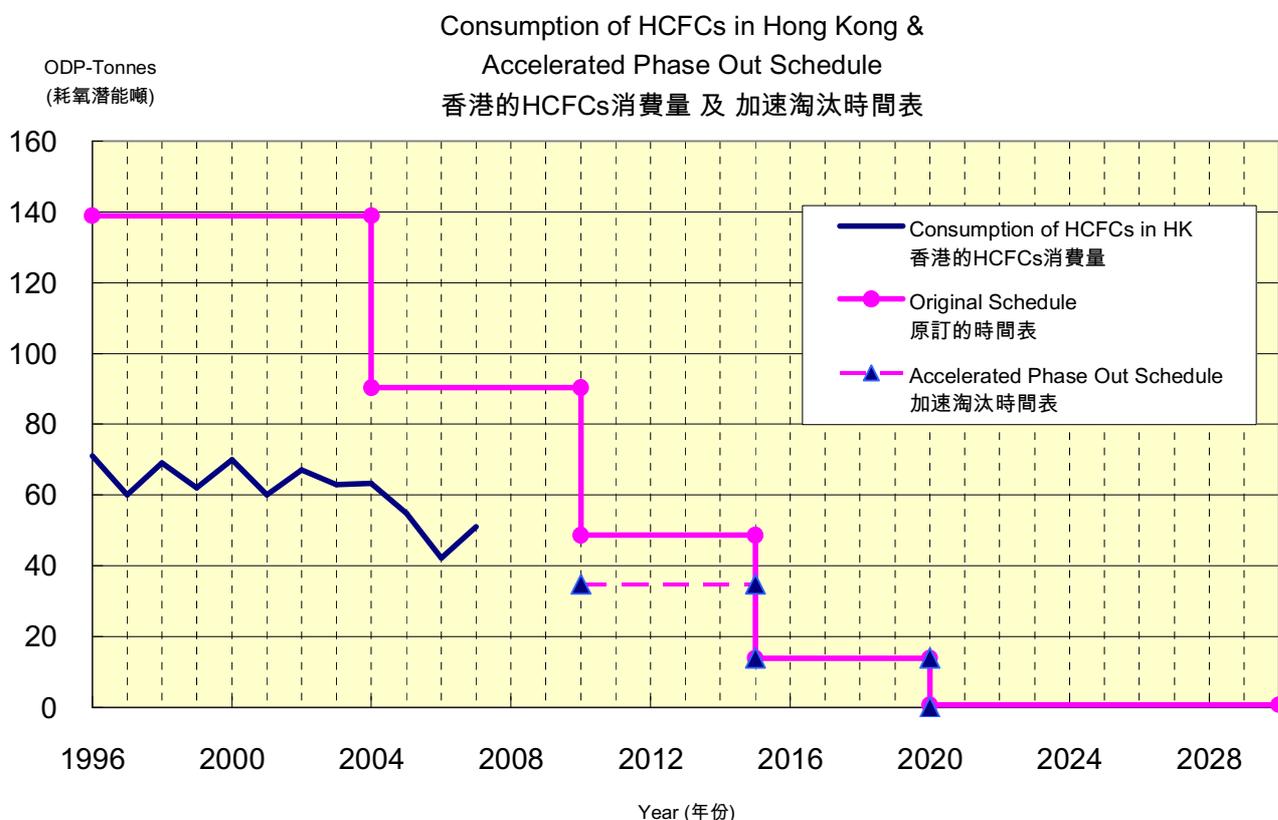
**Comparison of existing and new commitments**

	Original Phasing Out Schedule	Accelerated Phasing Out Schedule Under the 2007 Montreal Adjustment
1996	Freeze at baseline level <sup>[1]</sup>	--
2004	35% reduction	--
2010	65% reduction	75% reduction
2015	90% reduction	90% reduction
2020	99.5% reduction by 2020 <sup>[2]</sup>	100% reduction <sup>[3]</sup>
2030	100% reduction	

<sup>[1]</sup> Baseline level equals to 2.8% of 1989 CFC levels plus 100% of 1989 HCFC levels, i.e., 138 ODP-tonnes for Hong Kong.

<sup>[2]</sup> Consumption shall be restricted to the servicing of refrigeration and air conditioning equipment existing at that date.

<sup>[3]</sup> May allow 0.5% per cent for servicing in the period 2020–2030. Such need will be reviewed by the Meeting of Parties to Montreal Protocol in 2015.



**Overseas Practices**

**(a) Banning of products using HCFCs**

(i) EU:

Refrigeration and air-conditioning equipment using HCFCs have been banned from 1 January 2001 except for:

- fixed air-conditioning equipment with a cooling capacity of less than 100 kW which were delayed until 1 July 2002;
- reversible air conditioning/heat pump systems which were delayed until 1 January 2004.

(ii) Canada:

- No HCFC-22 equipment will be allowed to be manufactured or imported by 1 January 2010;
- no new HCFCs (including HCFC-123) equipment to be manufactured or imported in 2020.

(iii) USA:

- No production and importing of HCFC-142b and HCFC-22 for use in any new equipment, manufactured on or after 1 January 2010;
- phase out of the production and import of virgin HCFC-123 for use in new air conditioner and refrigeration equipment in 2020.

**(b) Banning of CFC-containing MDIs**

(i) Canada: Only allows CFC-free MDIs to be sold after 2005.

(ii) EU: No further import, sale or distribution of CFC-MDIs with salbutamol as the sole active ingredient from 2006.

(iii) Australia: Banned all CFC-MDIs in 2005 except two combined treatments MDIs which were phased out by end 2007.

(iv) Japan: Ceased CFC-MDI production for their domestic market in 2005.