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**Paper for House Committee**

**Report of the Subcommittee on Air Pollution Control (Volatile Organic Compounds) (Amendment) Regulation 2009**

**Purpose**

This paper reports on the deliberations of the Subcommittee on Air Pollution Control (Volatile Organic Compounds) (Amendment) Regulation 2009 (the Amendment Regulation).

**Background**

2. Volatile organic compounds (VOCs) play a significant role in the formation of ozone and respirable suspended particulates, which are major pollutants giving rise to the smog problem and reduced visibility in the Pearl River Delta (PRD) Region. They can also irritate eyes, cause respiratory tract symptoms and provoke asthmatic attacks in people who already have asthma. In April 2002, the Hong Kong Special Administrative Region Government and the Guangdong Provincial Government reached consensus to endeavour to reduce the regional emissions of VOCs by 55% by 2010, with reference to the 1997 emission level.

3. To achieve the reduction target, the Administration implemented a comprehensive programme to reduce VOC emissions, including: -

- (a) tightening the emission standards of newly registered motor vehicles in tandem with the European Union (EU);
- (b) requiring the recovery of petrol vapour from unloading and refuelling processes in petrol filling stations; and
- (c) implementing the Air Pollution Control (Volatile Organic Compounds) Regulation (Cap. 311 sub. leg. W) (the Principal Regulation) in phases since 1 April 2007 to limit the contents of VOCs in architectural paints/coatings, printing inks and selected consumer products, and to require installation of emission reduction devices on certain printing machines.

## **The Amendment Regulation**

4. The Amendment Regulation seeks to include in the Principal Regulation the remaining products with high VOC contents, i.e. vehicle refinishing paints, vessel paints, pleasure craft paints, adhesives and sealants. These newly regulated products are also controlled by the State of California of the United States of America (US), which is most advanced in controlling VOC emissions for better air quality. After the control of the newly regulated products has come into full operation, it will help reduce about 700 tonnes of VOC emissions a year, and such reduction is essential to secure the achievement of VOC emission reduction target.

5. The Amendment Regulation imposes liabilities on importers and local manufacturers of the newly regulated products for local sale and use, and contains the following key provisions which are similar to the requirements in the Principal Regulation –

- (a) prohibition of importation or local manufacture of the newly regulated products whose VOC contents exceed the prescribed maximum VOC content limits set out in Schedules 5, 6 and 7. The limits will take effect in phases between 1 January 2010 and 1 April 2012 (new sections 16A, 16E and 16I);
- (b) requiring the display of certain information of the newly regulated products in the Material Safety Data Sheets, trade catalogues, packaging or containers (new sections 16B, 16F and 16J); and
- (c) requiring reporting of annual sales quantities and particulars of the newly regulated products for the preceding calendar year, by 31 March of each year, starting in the year immediately after the year in which the relevant VOC content limits have taken effect (new sections 16C, 16G, 16K).

6. Same as the existing regulated products, the Amendment Regulation will not apply to the newly regulated products for export, re-export, transshipment or in transit, or if they are manufactured or imported prior to the effective dates of the relevant VOC content limits. Claims for exemption under section 21 of the Principal Regulation will be considered if the product is irreplaceable in serving a vital public health or security function or it is a trade sample not for sale in Hong Kong, or the exemption will be in the public interest. The control on newly regulated products is to take effect by phases starting from 1 January 2010.

## **The Subcommittee**

7. At the House Committee meeting held on 29 May 2009, Members agreed to form a Subcommittee to study the Amendment Regulation. To allow sufficient time

for the Subcommittee to study the subsidiary legislation, a resolution was passed at the Council meeting on 24 June 2009 to extend the scrutiny period to 14 October 2009.

8. The membership list of the Subcommittee is in **Appendix I**. Under the chairmanship of Hon Audrey EU Yuet-mee, the Subcommittee has held six meetings, including a meeting with deputations. Among the ten organizations attending the meeting, seven of them are trades related to vehicle refinishing paints. The list of organizations that have met with or provided submissions to the Subcommittee is in **Appendix II**.

### **Deliberations of the Subcommittee**

9. The Subcommittee generally supports the Amendment Regulation to control VOC emissions with a view to achieving the 2010 emission reduction target. Members have nevertheless considered some policy and legal issues related to the implementation of the Amendment Regulation. They have also taken note of a number of concerns expressed by the trades related to vehicle refinishing paints at the meeting on 2 July 2009, and requested the Administration to re-consult the trades concerned. The deliberations of the Subcommittee are summarized below.

#### VOC emission reduction target

10. The Subcommittee notes that the VOC emission reduction target of 55% by 2010 with reference to the 1997 emission level means that there would be a reduction of VOC emissions from 68 800 tonnes per year in 1997 to 31 000 tonnes<sup>1</sup> per year in 2010. With the implementation of measures to tighten the emission standards of newly registered motor vehicles, require the recovery of petrol vapour at petrol filling stations, and restrict the VOC content limits of hairsprays and printing inks under the Principal Regulation since 1 April 2007, the level of VOC emissions has already been lowered to 39 700 tonnes in 2007. While around 8 000 tonnes VOC emissions a year would be reduced due to the enforcement of the Principal Regulation in phases since 1 April 2007, it is expected that the extended control under the Amendment Regulation would help reduce a further 700 tonnes VOC emissions per year which is needed for achieving the 55% emission reduction target by 2010.

11. The Subcommittee is concerned that if the Guangdong Provincial Government will not regulate the same VOC-containing products, related businesses opportunities may be shifted to the Mainland. The Administration has assured members that to achieve the 2010 emission reduction target, both Hong Kong and Guangdong have implemented the PRD Regional Air Quality Management Plan. Key statutory or incentive measures undertaken by the Guangdong Provincial Government to reduce VOC emissions in the PRD Region include tightening emission standards of newly registered vehicles to National III standards, implementing an environmental labelling pilot system for vehicles, restricting the growth of motorcycles at key cities,

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<sup>1</sup> In the course of deliberations, the Administration has agreed to relax the VOC content limits for regulated vehicle refinishing paints which will bring the overall VOC emission reduction in 2010 to 31 035 tonnes rather than 31 000 tonnes per year. Please refer to paragraph 17 for details.

stepping up annual inspections and on-road spot checks on vehicles, replacing by 2003 paints using VOCs with xylene as the main solvent, strengthening implementation of cleaner production standards for printing and paint industries, and promoting the use of water-based vehicle refinishing paints etc.

#### Types of products to be controlled

12. As regards the selection of products to be controlled under the Amendment Regulation, the Administration has advised that the proposed products are the remaining VOC-containing products with high VOC contents, technically irreplaceable and subject to statutory control in California which is known to be most advanced in controlling VOC emissions for better air quality. The respective VOC contents and the estimated emission levels in Hong Kong are:

Products	VOC Content (grams/litre)	VOC Emissions (tonnes/year)
Vehicle refinishing paints	436 - 790	360
Vessel and pleasure craft paints	250 - 613	340
Adhesives and sealants	Negligible - 851	920

13. Some members of the Subcommittee have questioned why VOC emissions from power stations are not subject to statutory control. The Administration has explained that fossil fuel combustion inside the steam boilers and gas turbines used in thermal power stations are highly effective, and the emissions of VOC from power generation are of very small quantities. In 2007, the level was 435 tonnes which accounted for only 1.1% of the VOC emissions in the entire territory. Moreover, there will be an increasing use of natural gas for power generation and the process will emit less VOCs. As such, in line with the US and EU, VOC emissions from power plants in Hong Kong are not subject to any emission control limits.

#### Implications on operating costs

14. Some Subcommittee members have expressed concern about the implications on the operating costs to the affected trades for complying with the requirements under the Amendment Regulation, as compliant products are likely to be of limited supply and expensive. The Administration has advised that most compliant products are readily available in overseas markets. With more such products introduced into the local market, the costs will likely be reduced and should not be a major concern for the affected trades. For example, while the increase in cost of compliant adhesives and sealants may range from less than 10% to about 200%, it only accounts for about 1% of the total cost of the construction or renovation project. Similarly, the estimated 30% increase in the cost of compliant vessel paints and pleasure craft paints will result in only 3% increase in the total cost for ship body maintenance works.

### Vehicle refinishing paints

15. At the request of the Subcommittee, the Administration has conducted further consultation with suppliers of vehicle refinishing paints and vehicle repair trades, and proposed amendments to address their concerns as set out in the ensuing paragraphs.

#### *Standards to be adopted*

16. The Subcommittee has noted the concern of the paint suppliers about the Administration adopting the California Air Resources Board standards (the California standards) which are more stringent and may restrict the supply of paints for some paint categories. This may give rise to problems such as incompatibility between different paint coatings, colour mismatches, interruption of supply, higher product costs and lack of customer support. Paint suppliers have suggested adopting the standards under the European Paint and Products Directive (the EU standards) instead, since many vehicles in Hong Kong are manufactured and imported from Europe. They pointed out that the EU standards would help deliver better air quality than the California standards which excluded 47 solvents in the calculation of the VOC content of the paints.

17. As regards the standards to be adopted, the Administration has estimated that there will be about 80 tonnes VOC emissions more per year if the EU standards are adopted instead of the California standards. However, taking into account the supply logistic problems faced by the paint supply industry and the need for the vehicle repair trades to adapt to the application of water-based paints, the Administration has agreed to relax the maximum VOC content limits for regulated vehicle refinishing paints on par with the EU standards. The implementation date will also be deferred by one year to 1 October 2011. The Administration will move amendments to the Amendment Regulation to this effect. The Administration has estimated that these amendments together will lead to a shortfall of VOC emission reduction by about 35 tonnes in 2010, i.e. the level of VOC emission in 2010 will be 31 035 tonnes rather than 31 000 tonnes as required for meeting the 2010 emission reduction target. However, the actual shortfall will depend on the consumption of the regulated products and can only be ascertained by the time of compiling the 2010 emission figures.

18. Hon KAM Nai-wai has urged the Administration to consider adopting a gradual phased approach in tightening the maximum VOC content limits for regulated vehicle refinishing paints to meet the California standards. Hon Audrey EU has requested the Administration to also review whether additional type(s) of vehicle refinishing products should be included for regulation. Hon Vincent FANG has however called on the Administration to take into account the possible adverse impact on the business viability of vehicle repair trades if the California standards were to be adopted. In response, the Administration has agreed to review the need to tighten such limits one year after the implementation of the control on vehicle refinishing paints. The Secretary for the Environment will include in his speech in moving amendments to the Amendment Regulation a statement on the anticipated shortfall of VOC emission reduction in 2010, and an undertaking to conduct the review one year after implementation of the control on vehicle refinishing paints.

*Supply of compliant products and related costs*

19. Members share the concern of vehicle repair trades about the supply of compliant products to Hong Kong. They have urged the Administration to work with manufacturers to ensure that sufficient compliant products will be made available at affordable prices in the local market. The Administration has responded that most paint manufacturers are multi-national companies which should have no problem in sourcing compliant products globally.

20. Some representatives of the vehicle repair trades have indicated that the capital cost for a typical vehicle repair workshop to replace its painting facility for switching to use low VOC-containing or water-based compliant paints is estimated to be between \$50,000 and \$100,000. The costs will be as much as \$500,000 to \$1 million for a bus repair workshop. Some Subcommittee members have asked the Administration to explain why the capital cost is much higher than its estimation of \$5,000 to \$30,000. The Administration has explained that in upgrading the facilities, the operators will need a new set of spray gun for applying water-based colour coatings, paint disposal facilities, a few air blowers and upgrading of the compressor capacity to increase compressed air supply used for drying. The actual cost of upgrading will vary among workshops, ranging from \$5,000 to \$30,000.

21. As the increase in costs will add burden to the small and medium vehicle repair workshops, some members have requested the Administration to consider providing financial support to these workshops to meet the capital cost. Noting that the Administration has advised against subsidizing the trades based on the user-pay principle, these members are of the view that the Government should share part of the cost to show its support for the trades in protecting the environment.

*Training and publicity*

22. The Subcommittee has noted that to address the vehicle repair trades' worries about the skills required for applying water-based colour coatings, a demonstration using basic equipment has been held as part of the Administration's further consultation with the relevant trades. According to the Administration, it takes about ten minutes more for the water-based paints to dry than the conventional solvent-based paints. As regards some workshop operators' further concern about the implication of the painting process on productivity, particularly as the paint drying time can be longer if the primer and clear coatings are also low VOC-containing paints, the Administration has advised that it will take just a few minutes more for drying as both primers and clear coatings are solvent-based. To address the trades' concern, the Administration has undertaken that free training sessions will be held to help the technicians to master the basic skills for applying water-based paints. The Administration will also step up publicity on the new control measures to raise awareness of the compliant products in the market.

### Enforcement

23. On enforcement of the control measures, members have expressed concern whether any laboratory has been accredited under the Hong Kong Laboratory Accreditation Scheme to undertake tests for the VOC contents of the regulated products. The Administration has advised that it will conduct inspection regularly to check the use of the regulated products, and the Government Laboratory can carry out the relevant tests to ensure compliance. While the Amendment Regulation does not require mandatory testing of the VOC contents of the regulated products by the importers, there are local laboratories capable of performing such tests, one of which has been accredited for conducting the test for paints.

### Liability of retailers

24. Some members have enquired about the need to impose liability on retailers to prevent unscrupulous retailers from smuggling non-compliant regulated products into Hong Kong for selling at low prices. The Administration has advised that during the period between the phased implementation of the Principal Regulation since 1 April 2007 and the end of May 2009, about 590 inspections to retail outlets have been conducted and more than 990 samples of regulated products collected for analysis. There is no evidence of retailers knowingly selling illegal products. Retailers and wholesalers who have smuggled non-compliant products for sales or use in Hong Kong will themselves become importers and will be liable under the Principal Regulation. As controlling the source of supply is already effective for ensuring compliance, the Administration does not consider it necessary to impose liability on retailers at present. The Administration will continue to monitor and review the situation.

### Definition of "importer"

25. The Subcommittee has expressed the view that the new definition of "importer" in section 2(2) of the Amendment Regulation will catch a retailer or even a purchaser of a regulated product if he is in possession of the product after the time of importation. To allay members' concern, the Administration has subsequently revised the definition of "importer" to make it clear that the coverage of "importer" would not be extended to retailers or purchasers. The Administration has also advised that in exercising due diligence, the importers, if in doubt, should require the manufacturers to produce test reports proving that the VOC contents of the products are up to prescribed standards.

26. Some members are of the view that as "importer" will cover owner, consignee, agent or broker, it is practically difficult for shipping agents to ensure the regulated products which they carry will comply with the Amendment Regulation. The Administration has advised that the shipping agent is a key party in the chain of custody of goods being imported, and including him in the definition of "importer" will help the authority trace the actual importer. If a shipping agent is aware of or suspects certain facts about the goods arranged to be carried, he should take action to conduct further checking. If the shipping agent has taken all reasonable steps and

exercised all due diligence to avoid committing the offence, in establishing the defence provided under section 18 of the Principal Regulation, the shipping agent may adduce evidence, e.g. bill of lading or shipping order, to show that the offence committed is due to the act or default of another person or is due to reliance on information given by another person. Hon Miriam LAU has expressed reservation on the inclusion of shipping agent as "importer". She has indicated that she will request for a review in future if the shipping industry encounters operational difficulty after implementation of the Amendment Regulation.

### Offences and penalties

27. The Subcommittee notes that different offences created under the Amendment Regulation attract different penalties. The penalty may be a fine of \$200,000 and imprisonment for 6 months or a fine at level 5 (i.e. \$50,000) and imprisonment for 3 months." Hon Miriam LAU has expressed grave concern about the imposition of imprisonment for failing to comply with the statutory requirements under legislation related to environmental protection as the penalty is disproportionate to the nature of the offences in question. The Administration has advised that the penalties stated only refer to the maximum level of penalties, whereas in actual circumstances, it is more common to impose fine penalty upon conviction.

### **Proposed amendments**

28. The proposed amendments to be moved by the Administration at the Council meeting on 14 October 2009 are at **Appendix III**. The Subcommittee has noted and agreed to the proposed amendments and will not move any amendment in its name.

### **Advice sought**

29. Members are invited to note the deliberations of the Subcommittee.



**Subcommittee on Air Pollution Control (Volatile Organic Compounds)  
(Amendment) Regulation 2009**

**Membership List**

**Chairman** Hon Audrey EU Yuet-mee, SC, JP

**Members** Hon Miriam LAU Kin-yee, GBS, JP  
Hon Vincent FANG Kang, SBS, JP  
Hon KAM Nai-wai, MH  
Hon Cyd HO Sau-lan  
Hon CHAN Hak-kan

(Total : 6 members)

**Clerk** Ms Debbie YAU

**Legal Adviser** Mr Stephen LAM

**Date** 11 June 2009

**Subcommittee on Air Pollution Control (Volatile Organic Compounds)  
(Amendment) Regulation 2009**

**Organizations which have met with and/or submitted views to the Subcommittee**

1. Akzo Nobel Car Refinishes (Hong Kong) Limited
2. Color Master Limited
3. Consumer Council
4. Green Council
5. Hong Kong Bus Suppliers Association
6. Hong Kong General Building Contractors Association
7. Hong Kong Vehicle Repair Merchants Association
8. PPG Industries International Inc.
9. Service Managers Association
10. Tai Lee Hong HK Trading Company
11. The Chinese Manufacturers' Association of Hong Kong\*
12. The Hong Kong Institute of Surveyors\*

\* submitted views only

INTERPRETATION AND GENERAL CLAUSES ORDINANCE

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**RESOLUTION**

(Under section 34(2) of the Interpretation and General Clauses  
Ordinance (Cap. 1))

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**AIR POLLUTION CONTROL (VOLATILE ORGANIC  
COMPOUNDS) (AMENDMENT) REGULATION 2009**

RESOLVED that the Air Pollution Control (Volatile Organic Compounds)  
(Amendment) Regulation 2009, published in the Gazette as Legal  
Notice No. 107 of 2009 and laid on the table of the Legislative  
Council on 27 May 2009, be amended –

(a) in section 2(2), by repealing the new definition of  
“importer” and substituting –

““importer” (進口商) means a person by or for whom a  
regulated product is or was brought, or caused to  
be brought, into Hong Kong, and includes a  
person who, at or immediately after the time a  
regulated product is or was brought, or caused to  
be brought, into Hong Kong, is or was in  
possession of or entitled to the custody or control  
of the product, whether as owner, consignee,  
agent or broker;”;

- (b) in section 2(11), in the new definition of “exempt compound”, by repealing paragraph (f);
- (c) in section 14, in the new section 16A, by repealing “1 October 2010” and substituting “1 October 2011”;
- (d) in section 14, in the new section 16B(1), by repealing “1 October 2010” and substituting “1 October 2011”;
- (e) in section 14, in the new section 16B(1)(d), by adding “and” at the end;
- (f) in section 14, by repealing the new section 16B(1)(e);
- (g) in section 14, in the new section 16C(2), by repealing “31 March 2011” and substituting “31 March 2012”;
- (h) in section 14, in the new section 16C(3), by repealing “1 October 2010 to 31 December 2010” and substituting “1 October 2011 to 31 December 2011”;
- (i) in section 14, in the new section 16C(4), by repealing “1 October 2010” and substituting “1 October 2011”;
- (j) in section 14, in the new section 16C(4)(f)(ii), by repealing “and volume of exempt compounds”;
- (k) in section 20, in the new Part 1 of Schedule 5, by repealing the definitions of “exempt compound” and “Method 303”;
- (l) in section 20, in the new Part 1 of Schedule 5, in the definition of “volatile organic compound”, by repealing everything after “metallic carbonates” and substituting “and ammonium carbonate.”;

- (m) in section 20, in the new Part 1 of Schedule 5, by adding –

““textured and flexibilized coatings” (紋理及柔軟效果塗料) means coatings that are labelled and formulated to be applied exclusively on a flexible plastic substrate or on the lower part of the body of a motor vehicle to provide textured or flexibilized effect on the substrate or part;”;

- (n) in section 20, in the new section 1 of Part 2 of Schedule 5, by repealing everything after “condition –” and substituting –

“Item	Regulated vehicle refinishing paints	Maximum limits of volatile organic compound content
1.	Adhesion promoters	840
2.	Clear coatings (non-matt finish)	420
3.	Clear coatings (matt finish)	840
4.	Colour coatings	420
5.	Multi-colour coatings	680
6.	Pre-treatment coatings	780
7.	Primers	540
8.	Single-stage coatings	420
9.	Temporary protective coatings	60
10.	Textured and flexibilized	840

coatings

- |     |                          |       |
|-----|--------------------------|-------|
| 11. | Truck bed liner coatings | 310   |
| 12. | Underbody coatings       | 430   |
| 13. | Uniform finish coatings  | 840”; |

(o) in section 20, in the new Part 3 of Schedule 5, by repealing everything after “formula –” and substituting –

$$\frac{W_a - W_b}{V_d - V_e}$$

where –

Wa represents the weight of volatile matters in grams as determined by Method 24;

Wb represents the weight of water in grams as determined by Method 24;

Vd represents the volume of material in litres as determined by Method 24;

Ve represents the volume of water in litres, calculated by dividing the weight of water as determined by Method 24 by the density of water.”.