ETWB(E)55/01/118

LEGISLATIVE COUNCIL BRIEF

Air Pollution Control Ordinance (Cap. 311)

Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) (Amendment) Regulation 2004

INTRODUCTION

The Secretary for the Environment, Transport and Works has made the Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) (Amendment) Regulation 2004 (the Amendment Regulation), at **Annex**, under section 43 of the Air Pollution Control Ordinance (Cap. 311) to require vapour recovery systems to be installed at petrol filling stations for recovering petrol vapour during vehicle refuelling.

JUSTIFICATIONS

2. Petrol contains volatile organic compounds (VOCs) that evaporate inside the fuel tank of a vehicle. When a vehicle fuel tank is refuelled at a petrol filling station, the VOC vapour will be displaced by the incoming petrol. Unless controlled, the VOC vapour will disperse into the atmosphere. The major harmful effects of VOCs are as follows -

(a) VOCs play a significant role in the formation of ozone and respirable suspended particulates (RSPs) in the atmosphere. Under sunlight, they react with nitrogen oxides (NOx) to form ozone through a photochemical process. Ground level ozone is an air pollutant that can irritate the eye and the lung, and can cause breathing difficulties. RSPs

can penetrate deeply into the lung and interfere with the functioning of the respiratory system. Apart from long-term health effects, RSPs can also exacerbate smog phenomenon and impair visibility of the region; and

(b) VOC vapour from petrol increases the potential health risk to the public, since it contains benzene, which is a carcinogen. The smell of VOCs can also be a nuisance to the people in the vicinity of petrol filling stations.

3. Since April 1999, we have required owners of petrol filling stations and petrol delivery vehicles to install effective vapour recovery systems to reduce petrol vapour emissions when unloading petrol from petrol delivery vehicles into the petrol storage tanks at petrol filling stations. To further reduce VOC emissions from petrol filling stations, the petrol vapour emissions during refuelling of petrol vehicles should also be recovered. There are two options for recovering the petrol vapour during the vehicle refuelling process: installation of onboard refuelling vapour recovery (ORVR) systems in petrol vehicles or vapour recovery systems at petrol filling stations.

4. After a joint study undertaken together with the major oil companies operating in Hong Kong, the Government found the installation of vapour recovery systems at petrol filling stations more effective for the following reasons-

(a) right-hand drive petrol vehicles fitted with an ORVR system will not be widely available in the market in the foreseeable future and, since Hong Kong's motor vehicle market is small, vehicle manufacturers have no plans to set up a special production line to supply vehicles with an ORVR system to Hong Kong; and

(b) since an ORVR system forms part of the fuel delivery system of a vehicle and cannot be retrofitted on existing vehicles, we could only

require newly registered vehicles to be equipped with an ORVR system. If we go down this route, we would have to rely on the natural retirement and replacement of our existing petrol vehicle fleet and it will take a long time to achieve our intended objective. However, installation of vapour recovery systems at petrol filling stations can be completed within a much shorter time.

THE REGULATION

5. The Amendment Regulation is mainly to require the owner of a petrol filling station to:

(a) install a vapour recovery system that works on the vacuum-assist principle to recover the petrol vapour displaced from the fuel tank of a vehicle during refuelling and return it to the petrol storage tank in the station;

(b) arrange for the vapour recovery system to be tested by a competent examiner, who is a professional engineer in relevant disciplines registered under the Engineers Registration Ordinance (Cap.409), before the system is put into use for the first time and thereafter once every 12 months, or after major modifications of the system. In addition, the owner will need to have the system tested by a competent examiner when required by the Authority if the Authority believes that the system is not functioning properly;

(c) display the latest certificate for the vapour recovery system of his station issued by a competent examiner, who has found the system satisfying the test requirements stipulated in Schedule 2 of the Amendment Regulation; and

(d) stop the refuelling operation when the vapour recovery system of the station is not in operation.

6. The Amendment Regulation also makes it an offence for a competent examiner delivering a certificate of test, which to his knowledge is false or misleading in a material particular.

7. For existing petrol filling stations, the Amendment Regulation allows their owners to have 36 months from the date of commencement of the Amendment Regulation to comply with its requirements. These owners have to, however, comply with all the requirements once they have installed the vapour recovery systems within the 36 months grace period.

LEGISLATIVE TIMETABLE

8. We will publish the Amendment Regulation in the Gazette on 24 December 2004 and table it at the Legislative Council for negative vetting on 5 January 2005. Subject to the negative vetting by the Legislative Council, the Amendment Regulation will take effect on 31 March 2005.

BASIC LAW AND HUMAN RIGHTS IMPLICATIONS

9. The proposal is in conformity with the Basic Law, including the provisions concerning human rights.

BINDING EFFECT OF THE LEGISLATION

10. The proposed amendments will not affect the current binding effect of the Air Pollution Control (Petrol Filling Stations) (Vapour Recovery) Regulation.

FINANCIAL AND STAFF IMPLICATIONS

11. The implementation of the proposed amendments will not require any additional financial commitment from the Government. Additional staff will not be required.

ECONOMIC IMPLICATIONS

12. For a typical petrol filling station with four dispensers, the cost of installing a vapour recovery system will be around $400,000. Its annual maintenance and operating cost will be around $80,000, and annual certification cost around $20,000. The installation cost and the annual operating cost of a vapour recovery system will only be about 1.2% and 0.2% of the petrol turnover of a petrol filling station. Hence, the impact of the proposal on petrol price should be minimal. As the petrol vapour captured is reusable as petrol, the actual impact is expected to be even smaller.

13. As a reference, the requirement for recovering the petrol vapour emitted during the unloading of petrol at petrol filling stations, which was implemented in 1999, cost about $500,000 per petrol filling station for installation and $100,000 per petrol delivery vehicle. The requirement had caused no noticeable increase in petrol price.

ENVIRONMENTAL IMPLICATIONS

14. The proposal is part of our efforts to attain the emission reduction targets that we have agreed with the Guangdong Provincial Government for improving regional air quality. When fully implemented, it can reduce about 740 tonnes of

VOC emission per year from local petrol filling stations, which will otherwise be released into the environment during the refuelling process. The VOC reduced amounts to about 2% of our VOC emissions. The proposal can also help alleviate nuisance caused by the smell of petrol vapour to nearby residents of petrol filling stations.

CONSULTATION

15. We consulted the Legislative Council Panel on Environmental Affairs on 22 July 2003. Members had no objection to the proposal but requested the Administration to communicate further with the oil companies before introducing the proposal. In subsequent discussions, the oil companies had confirmed their support to the proposal. The Advisory Council on the Environment endorsed the proposals on 14 July 2003.

PUBLICITY

16. A press release will be issued on 24 December 2004. A spokesman will be available for answering media enquiries.

ENQUIRIES

17. For any enquiries, please contact Mr. Joe W. Y. Fong, Senior Environmental Protection Officer at 2594 6251.

Environment, Transport and Works Bureau
December 2004