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Paper for the House Committee meeting on 28 February 2014

**Report of the Subcommittee on
Air Pollution Control (Marine Light Diesel) Regulation**

Purpose

This paper reports on the deliberations of the Subcommittee on Air Pollution Control (Marine Light Diesel) Regulation ("the Regulation").

Background

2. Marine vessels are the largest local air emission source. In 2011, local crafts and river vessels plying between Hong Kong and the Pearl River Delta ("PRD") ports accounted for about 21%, 32% and 57% of the total emissions of sulphur dioxide, respirable suspended particulates and nitrogen oxides from the marine sector.

3. At present, the quality of light diesel oil supplied to marine vessels is not regulated.

4. According to the Administration, it has consulted marine light diesel ("MLD") importers and suppliers and local trades which use marine fuels on the proposal to introduce a statutory sulphur limit of 0.05% on MLD, i.e. a 90% reduction from 0.5%, to reduce vessels' emissions. They have no objection in principle to the proposal but some vessel operators have expressed concerns about the possible cost implications. It also consulted the Legislative Council ("LegCo") Panel on Environmental Affairs on 25 March 2013 and the Advisory Council on the Environment on 22 April 2013. They both supported the proposal. The LegCo Panel on Environmental Affairs also had a session to receive deputations from the stakeholders concerned on 22 July 2013.

The Regulation

5. The Regulation aims to control the sulphur content of MLD supplied in the local market, and does not apply to MLD that is goods in transit, transshipment goods, or solely for export or re-export. In line with international practices, the restriction of supply of MLD in the local market does not apply to warships or any other vessels on military service.

6. Under the Regulation, locally supplied MLD must comply with the requirements specified in Schedule 1 to the Regulation, which include a requirement that the MLD must not contain more than 0.05% sulphur by weight. Any person who supplies or causes to supply any MLD which does not comply with the Schedule commits an offence and is liable on conviction to a fine of \$50,000 and imprisonment for three months. Further, MLD importers are required to submit monthly reports to the Director of Environmental Protection whilst MLD importers and MLD suppliers are also required to keep certain records. Any such importer or supplier who, without reasonable excuse, fails to comply with any of the requirements commits an offence and is liable on conviction to a fine of \$50,000 and imprisonment for one month.

7. The Regulation comes into operation on 1 April 2014.

The Subcommittee

8. At the House Committee meeting held on 24 January 2014, Members agreed that a subcommittee should be formed to study the Regulation in detail. The membership list of the Subcommittee is in **Appendix I**.

9. Under the chairmanship of Hon Cyd HO, the Subcommittee held two meetings with the Administration. The Subcommittee also received written submissions from three organizations which had previously given their views on the proposal to the LegCo Panel on Environmental Affairs at its meeting held on 22 July 2013. A list of the organizations is in **Appendix II**.

10. To allow more time for the Subcommittee to scrutinize the Regulation, a motion was moved by Hon Cyd HO, on behalf of the Subcommittee, at the Council meeting of 19 February 2014 to extend the scrutiny period of the Regulation from the Council meeting of 19 February 2014 to that of 19 March 2014.

Deliberations of the Subcommittee

Application of the Regulation

11. Members note that the Regulation does not prohibit local vessels from acquiring MLD from outside Hong Kong, say, in the Mainland where the national standard for sulphur content of MLD is 0.035%, as the Regulation aims to control the sulphur content of MLD supplied in the local market. Members further note that the Regulation does not prohibit supply of MLD that is goods in transit, transshipment goods, or solely for export or re-export and to warships or any other vessels on military service.

12. At the request of the Subcommittee, the Administration has agreed to step up publicity efforts to inform owners and operators of local vessels that they will not be held liable for using MLD containing a sulphur content exceeding 0.05% by weight after the implementation of the Regulation as the Regulation focuses on the supply side of MLD.

Price of light diesel oil with a sulphur content of not more than 0.05%

13. Whilst noting that the import price differential between 0.5% and 0.05% sulphur diesels was within HK\$0.07/litre, or around 1% of the current retail price of about HK\$7/litre, question was raised as to how the Administration could ensure that oil companies would not increase the price of light diesel oil with a sulphur content of not more than 0.05% ("LSD") after the introduction of the Regulation.

14. The Administration has advised that the implementation of the Regulation would not reduce the competition on the local market because all oil companies have no problem supplying LSD. To enhance the transparency of the market, the Administration would provide the LegCo Panel on Economic Development with monthly import price of LSD for publication in the LegCo's website for public monitoring. The Administration has further advised that according to oil companies, the import price differential of HK\$0.07/litre between 0.5% and 0.05% sulphur diesels is expected to keep narrowing because in the Asian fuel market, the supply of 0.5% sulphur diesel is declining whilst that of 0.05% sulphur diesel is growing. Moreover, as the proposed across-the-board fuel upgrade would cause no extra fuel handling cost, the actual retail price adjustment is expected to be quite close to that of the import prices.

15. On the concern about the possibility of price manipulation by oil companies after the implementation of the Regulation, the Administration has reiterated that the import price of LSD would be determined by market forces and such price would be made available in public domain. If there is significant

difference between the retail price and the import price of LSD, the oil companies would need to explain why this is the case. The Administration has also pointed out that there is no cause for concern about price manipulation, as LSD is a standard type of MLD available in Asian market. Moreover, all oil companies have confirmed their ability to supply LSD. In fact, in the last quarter of 2013, LSD accounted for over 20% of the locally supplied MLD.

Technical feasibility of upgrading the quality of local MLD

16. Members note that the EPD commissioned the University of Hong Kong to examine the technical feasibility of upgrading the quality of local MLD. Whilst the study confirmed the technical feasibility of powering local vessels with LSD, it also revealed that there was a 1.8% drop in the maximum power output of the engines and an increase of fuel consumption from 1.1% to 1.3% under constant loading conditions. In the light of this and given that the maximum power output of the engines of local vessels is capped by the Fisheries Protection Ordinance (Cap. 171), Hon Steven HO considers that the Administration should undertake technological studies to come up with innovative products which could help reduce emissions from vessels on the one hand and reduce fuel consumption by vessels on the other.

17. The Administration has pointed out that local vessels do not often operate at maximum power. Moreover, an average 1.8% drop in the maximum power output of the engines during the test is insignificant and unnoticeable during operation. In fact, this 1.8% change is also within the range of experimental error, which would suggest the change being insignificant. The consultancy study also revealed that no wear and tear in fuel injectors was observed in the use of LSD. The test also recorded lower engine oil consumption as well as slower deterioration of the engine oil as to decrease in total base number and increase in viscosity when the engine ran on LSD. This means lower operating costs for LSD because the engine oil needs fewer replacement/replenishment. To encourage local transport sector to test out green and innovative transport technologies for better air quality, a \$300 million Pilot Green Transport Fund ("the Fund") was launched by the EPD in March 2011. Some stakeholders in the local marine sector have expressed interest in testing new transport technologies with the aid of the Fund.

18. On the question as to whether consideration would be given to providing training to operators of local vessels on ways to maintain and repair their vessels using the LSD and other green and innovative products, the Administration has advised that it would liaise with the Vocational Training Council on providing such training for operators of local vessels as necessary.

Clause 2 - Interpretation

19. Members note that the Administration has sought confirmation from the parties concerned on the Chinese translation of "McGraw Hill Financial", "Platts", "Methodology and Specifications Guide - Asia Pacific & Middle East Refined Oil Products", "International Organization for Standardization" and "Petroleum products - Fuels (class F) - Specifications of marine fuels" under "ISO specifications".

20. Members further note the explanation from the Administration that the reason for specifying the December 2013 edition of the document "Methodology and Specifications Guide - Asia Pacific & Middle East Refined Oil Products" under "Platts specification" is to avoid ambiguity, which would otherwise arise if the version of specifications is not specified.

Clause 4 - Supply of non-compliant marine light diesel prohibited

21. Section 4(1) of the Regulation stipulates that a person commits an offence if the person supplies, or causes to be supplied, any MLD that does not comply with Schedule 1. Members have asked whether an operator of a local vessel who unknowingly supplied MLD containing a sulphur content exceeding 0.05% to an operator of another local vessel at the request of the latter at sea commits an offence under the Regulation.

22. The Administration has replied affirmatively, as it is stated in section 4(1) of the Regulation that "a person commits an offence if the person supplies, or causes to be supplied, any MLD that does not comply with Schedule 1" and "a person" would include the operator who supplies MLD as mentioned in paragraph 21 above. If section 4(1) of the Regulation targets only MLD importers/suppliers, a person caught under this section might try to argue that he/she is only providing MLD for his/her friend, which does not amount to a business of supplying MLD and hence he/she should not be held liable to an offence under section 4(1) of the Regulation. If such an argument is allowed to run as a defence, it will seriously undermine the effectiveness of the Regulation. The Administration has further pointed out that the Regulation seeks to control MLD at the supply side by targeting MLD importers and suppliers, not the users. In respect of the example raised by the Subcommittee, the local vessel operator who unknowingly supplied MLD containing a sulphur content exceeding 0.05% to another person would be held liable for supplying non-compliant MLD under section 4(1) of the Regulation. However, since this local vessel operator is not an MLD supplier, he/she would not be held liable to the offence under section 7(1) of the Regulation, which requires MLD suppliers to keep MLD transaction records.

23. Members have also asked about the definitions of "warship" and "any other vessel on military service" referred to section 4(2) of the Regulation, which stipulates that subsection (1) does not apply if the MLD is supplied to a warship or any other vessel on military service.

24. The Administration has advised that in the Regulation, "warship" and "any other vessel on military service" refer collectively to military vessels. Whilst "warship" is self-evident, the Administration considers "any other vessel on military service" as any vessel under the establishment of the navy. In other pieces of legislation relating to maritime activities, military vessels are also mentioned but no definition is given in the legislation. No enforcement problem has been encountered. The Government will also be notified when these vessels call Hong Kong. When enforcing the Regulation, for local vessels that merely provide services like transportation, bunkers and stores for military vessels whilst the latter are in Hong Kong, the Administration will not treat these local vessels as "warships" or "any other vessels on military service".

25. At the request of the Subcommittee, the Secretary for the Environment will reiterate the meaning of "warship" and "any other vessel on military service" referred to section 4(2) of the Regulation when the Chairman of the Subcommittee reports the deliberations of the Subcommittee at the Council meeting of 19 March 2014 so as to better address Members' concern.

Clause 8 - Authority may request record

26. Hon Frankie YICK has asked whether a reasonable timeframe could be specified under section 8(1) of the Regulation for an MLD importer or supplier to submit to the Air Pollution Control Authority any report, document or any other record which he is required to keep under the Regulation.

27. The Administration has replied that it would take into account the nature of the case and set the time for submitting any report or information in a practicable manner.

Effectiveness of the Regulation to improve air quality

28. Members queried the effectiveness of the implementation of the Regulation to improve the ambient air quality of Hong Kong, as the sulphur content of heavy oil used by ocean-going vessels ("OGVs") whilst at berth in Hong Kong waters could be as high as 3.5%.

29. The Administration has explained that since OGVs operated internationally, Hong Kong has adopted the international requirements prescribed under Annex VI to the International Convention for the Prevention of

Pollution from Ships of the International Maritime Organisation ("IMO") to regulate OGV emissions and the sulphur content of heavy fuel oil, a common fuel for OGVs. At present, the sulphur content of heavy fuel oil used by OGVs could not exceed 3.5% as specified by the IMO. To help improve air quality, particularly in the port areas, the Administration plans to mandate all OGVs to switch to the use of fuel containing not more than 0.5% sulphur when berthing in Hong Kong waters in 2015. The Administration has further explained that the "fuel switch" proposal only applied to OGVs when they are at berth, and the Administration would not ban the supply of heavy fuel oil in Hong Kong.

30. As to how the Administration could ensure that OGVs do switch to cleaner fuel when berthing in Hong Kong waters, the Administration has advised that EPD staff would, when necessary, board the OGV to inspect the relevant documents, such as the ship's logbooks which record the time of fuel switch operation, and conduct fuel sampling whilst the OGV is at berth in accordance with the relevant provisions of the Air Pollution Control Ordinance (Cap. 311). The Administration has further advised that it would explore the feasibility of using remote sensing equipment to check whether the fuel switch has taken place to support the enforcement.

31. Concern was raised that Hong Kong might lose its competitiveness to the ports in the PRD if the latter did not require OGVs berthing in their waters to switch to cleaner fuel in parallel with Hong Kong, as fuel with sulphur content not exceeding 0.5% by weight was 40% more costly than heavy fuel oil on which OGVs were running.

32. The Administration has advised that it is in discussion with the relevant Mainland authorities in Shenzhen and the Guangdong Province on the possibility of making the fuel switch at berth a standard practice for the ports in the PRD.

Advice sought

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

**Subcommittee on
Air Pollution Control (Marine Light Diesel) Regulation**

Membership list

Chairman Hon Cyd HO Sau-lan

Members Hon Steven HO Chun-yin
 Hon Frankie YICK Chi-ming
 Hon CHAN Han-pan
 Dr Hon Kenneth CHAN Ka-lok
 Ir Dr Hon LO Wai-kwok, BBS, MH, JP

(Total : 6 Members)

Clerk Mary SO

Legal adviser Evelyn LEE

**Subcommittee on
Air Pollution Control (Marine Light Diesel) Regulation**

List of organizations which have provided written submissions

1. Sai Kung Ferry Traders Association
2. The Hong Kong Institution of Engineers
3. ExxonMobil Hong Kong Ltd