

LEGISLATIVE COUNCIL BRIEF

Air Pollution Control Ordinance (Cap. 311) Air Pollution Control (Marine Light Diesel) Regulation

INTRODUCTION

The Secretary for the Environment has, after consultation with the Advisory Council on the Environment, made the Air Pollution Control (Marine Light Diesel) Regulation at **Annex** on 9 January 2014 under section 43 of the Air Pollution Control Ordinance (Cap. 311). The Regulation aims to introduce regulatory control on the quality of marine light diesel (MLD), i.e. light diesel oil used by marine vessels, which includes imposing a cap on its sulphur content in order to reduce emissions from vessels.

JUSTIFICATIONS

2. In Hong Kong, the quality of fuels supplied to motor vehicles is regulated under the Air Pollution Control (Motor Vehicle Fuel) Regulation, Cap. 311L with a view to reducing air pollution. The quality of fuels supplied to marine vessels is not regulated at present. We need to take measures to reduce the sulphur content of marine fuels in order to reduce vessels' emissions.

3. Among the types of fuels set out in the Dutiable Commodities Ordinance (Cap. 109), heavy oil, light diesel oil and petrol are used by vessels. Heavy oil is used by ocean-going vessels (OGVs). Since OGVs operate internationally, Hong Kong has adopted the international requirements prescribed under Annex VI to the International Convention for the Prevention of Pollution from Ships (MARPOL)¹ to regulate OGV emissions and the sulphur content of heavy oil. At present, the sulphur

¹ Hong Kong has adopted MARPOL Annex VI requirements through the Merchant Shipping (Prevention of Air Pollution) Regulation, Cap. 413M.

content of heavy oil used by OGVs cannot exceed 3.5%. Local vessels², depending on their engine types, run on either light diesel oil or petrol. If refilled in Hong Kong, petrol vessels will get motor petrol, which has a sulphur limit of 0.001% (10ppm) whereas diesel vessels will normally get light diesel oil with a sulphur content of about 0.5% (5000ppm).

4. We plan to introduce a statutory sulphur limit of 0.05% (500ppm) on MLD, i.e. a 90% reduction from 0.5%. In pitching the sulphur limit at 0.05%, we have factored in the views of relevant stakeholders including MLD importers (oil companies), MLD suppliers (i.e. oil distributors, oil retailers, oil traders) and local trades relating to marine vessels. Besides, we also completed a trial in 2013 which confirmed the technical feasibility of powering local vessels with 0.05% sulphur diesel.

5. Marine vessels, including OGVs and local vessels, are the largest emission source of local air pollutants. In 2011, local vessels accounted for 21% of sulphur dioxide (SO₂), 32% of respirable suspended particulates (RSP) and 57% of nitrogen oxides emitted from the marine sector. Reducing local vessel emissions can improve air quality and better protect public health. The improvement will be more evident around coastal areas.

THE REGULATION

6. The Regulation provides for the specifications that must be met by MLD supplied in Hong Kong as well as the requirement on MLD importers and suppliers to keep relevant records. Its key provisions are as follows –

- (a) Locally supplied MLD must contain not more than 0.05% sulphur by weight and must comply with any of the three specifications below -
 - (i) those defined for "Category ISO-F-DMA" in ISO 8217:2012 published by the International Organization for Standardization;
 - (ii) those defined for "Gasoil 0.05% Sulfur" in the FOB Singapore gasoil/diesel specifications published by Platts³; or

² In this context, "local vessels" cover domestic vessels operating restrictively within Hong Kong waters plus river vessels plying between Hong Kong and Pearl River Delta ports.

³ Platts is a division of McGraw Hill Financial, New York, U.S.A.

- (iii) those specified for motor vehicle diesel in the Air Pollution Control (Motor Vehicle Fuel) Regulation (Cap. 311L).
- (b) It requires MLD importers to submit monthly reports to the air pollution control authority ("the Authority", i.e. the Director of Environmental Protection) setting out information regarding MLD supplied by the importer in the previous month, keep MLD quality test reports and transactions records regarding the acquisition and supply of MLD by the importers for 3 years.
- (c) It requires MLD suppliers to keep transaction records regarding their acquisition and supply of MLD for 3 years.

7. The Authority may require MLD importers and suppliers to submit for inspection the records required to be kept as stated in para. 6(b) and (c) above. Requiring MLD importers to submit monthly reports on the supply of MLD and keep MLD quality test reports seeks to strengthen the control at the primary supply. Requiring MLD importers and suppliers to retain MLD transaction records helps to establish the supply chain from the source, i.e. MLD importers, to the end-users, which can facilitate enforcement work.

8. In line with international practices, the restriction on supply as stated in para. 6(a) above does not apply to MLD supplied to a warship or any other vessel on military service.

9. The Regulation aims to control the supply of MLD 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 a prosecution for an offence under this Regulation, any MLD found in Hong Kong is presumed, in the absence of evidence to the contrary, to be MLD that does not fall into any of these categories.

10. A person⁴ contravening the requirement as stated in para. 6(a) above (i.e. supplying non-compliant MLD) commits an offence and is liable on conviction to a fine at level 5 (i.e. \$50,000) and to imprisonment for 3

⁴ In the case of supply of non-compliant MLD, depending on the facts as shown by the evidence available, the person that may be held responsible for the offence includes:

- (a) the MLD importer or supplier as a body corporate and the person concerned in its management;
- (b) the MLD importer or supplier as a sole proprietor.

months. A person contravening the requirements as stated in para. 6(b) or (c) above (i.e. failing to submit monthly reports or keep relevant records) commits an offence and is liable on conviction to a fine at level 5 (i.e. \$50,000) and to imprisonment for 1 month.

LEGISLATIVE TIMETABLE

11. We will publish the Regulation in the Gazette on 17 January 2014 and table it at the Legislative Council for negative vetting on 22 January 2014. The Regulation will take effect on 1 April 2014.

IMPLICATIONS

Environmental Implications

12. Marine vessels operating on 0.05% sulphur diesel emit about 90% less SO₂ and 30% less RSP than those on 0.5% sulphur diesel. Implementing the Regulation will reduce SO₂ and RSP emissions from the marine sector by 19% and 10% respectively. This will contribute towards an improvement to ambient air quality and reduced health risks of the population, especially in the coastal areas.

Sustainability Implications

13. The Regulation is in line with the sustainability principles of avoiding environmental problems for present and future generations and providing a living environment which protects the health of Hong Kong people. Better air quality is also conducive to improving the quality of life, attracting more tourists and retaining foreign investments and talents in Hong Kong. All these would help reinforce Hong Kong's position as a world city and leading business hub.

Financial and Civil Service Implications

14. The Environmental Protection Department will absorb the additional workload arising from implementing and enforcing the Regulation within its

existing resources.

Economic Implications

15. As reflected by the free-on-board fuel prices, the import price differential between 0.5% and 0.05% sulphur diesels should be within HK\$0.07/litre, or around 1% of the current retail price of about HK\$7/litre. This price differential is expected to keep narrowing because in the Asian fuel market, the supply of 0.5% sulphur diesel is declining while that of 0.05% sulphur diesel is growing. As the fuel upgrade will be applied across the board (i.e. not applied only to a segment of the trade), no extra fuel handling cost would be involved. We envisage the subsequent cost impact on vessel operators and owners would depend on the import price differential and the difference in retail price markup for these two fuels by MLD suppliers. The cost impact may be relatively more heavily felt among operators and owners with a higher proportion of fuel cost in the total operating cost of the vessels and those operating with lower profit margins. Nevertheless, the increase in fuel cost is partially offset by savings in operating and maintenance costs from the use of 0.05% sulphur diesel, which could slowdown the deterioration of engine oil and reduce wear-and tear of engine cylinder liners. Part of the increased cost burden could be passed on to users of marine transportation services, including consumers and various businesses, resulting in higher business costs. But the overall impact on consumer price inflation is not expected to be significant.

Other Implications

16. The Regulation has no family implications. It is in conformity with the Basic Law, including the provisions concerning human rights.

CONSULTATION

17. We have consulted MLD importers, MLD suppliers and local trades using marine fuel (including vessel owners, vessel operators, and mechanics) and have taken their views into account when drawing up the proposal. They have no objection in principle to our proposal, though some vessel operators have expressed concerns about the possible cost implications.

18. We consulted the Legislative Council Panel on Environmental Affairs on 25 March 2013 and the Advisory Council on the Environment on 22 April 2013. They supported the proposal.

PUBLICITY

19. We will issue a press release and inform the concerned trades upon gazetting the Regulation.

ENQUIRIES

20. For enquiries about this brief, please contact Mr W C Mok, Assistant Director of Environmental Protection (Air Policy) at 35098618.

Environmental Protection Department
January 2014

Air Pollution Control (Marine Light Diesel) Regulation

(Made by the Secretary for the Environment under section 43 of the Air Pollution Control Ordinance (Cap. 311) after consultation with the Advisory Council on the Environment)

1. Commencement

This Regulation comes into operation on 1 April 2014.

2. Interpretation

In this Regulation—

batch (批次), in relation to marine light diesel, means a quantity that is homogeneous with regard to the parameters set out in—

- (a) the ISO specifications;
- (b) the Platts specifications; or
- (c) the motor vehicle diesel specifications;

classification (分類), in relation to marine light diesel, means classification—

- (a) according to—
 - (i) the ISO specifications; or
 - (ii) the Platts specifications; or
- (b) as motor vehicle diesel;

document (文件) includes a book, voucher, receipt or data material, or information that is recorded in a non-legible form but is capable of being reproduced in a legible form;

goods in transit (過境貨品) means marine light diesel that is brought into Hong Kong solely for the purpose of taking it out

of Hong Kong and that remains at all times on the vessel, vehicle or aircraft that brought it into Hong Kong;

ISO specifications (ISO 規格) means the specifications set out in Table 1 of the document ISO 8217:2012: “Petroleum products—Fuels (class F)—Specifications of marine fuels” published by the International Organization for Standardization;

light diesel oil (輕質柴油) has the same meaning as in section 69 of the Dutiable Commodities Ordinance (Cap. 109);

marine light diesel (船用輕質柴油) means any light diesel oil which is intended for use in a vessel;

marine light diesel importer (船油進口商) means a person who carries on a business of importing marine light diesel and of supplying marine light diesel;

marine light diesel supplier (船油供應商) means a person who carries on a business of supplying marine light diesel but is not a marine light diesel importer;

motor vehicle diesel (汽車柴油) means any light diesel oil which complies with the motor vehicle diesel specifications;

motor vehicle diesel specifications (汽車柴油規格) means the specifications set out in Schedule 1 to the Air Pollution Control (Motor Vehicle Fuel) Regulation (Cap. 311 sub. leg. L);

Platts specifications (普氏規格) means the specifications set out in the table entitled “FOB Singapore gasoil/diesel specifications” in the December 2013 edition of the document “Methodology and Specifications Guide—Asia Pacific & Middle East Refined Oil Products” published by Platts, a division of McGraw Hill Financial, New York, U.S.A.;

supply (供應) includes—

- (a) offer or expose for supply;

- (b) sale; and
- (c) offer or expose for sale;

transaction (交易) includes any dealing whether with or without consideration;

transhipment goods (轉運貨品) means any imported marine light diesel that—

- (a) is consigned on a through bill of lading or a through air waybill from a place outside Hong Kong to another place outside Hong Kong; and
- (b) is or is to be removed from the vessel, vehicle or aircraft in which it was imported, and, before being exported, is either—
 - (i) returned to the same vessel, vehicle or aircraft; or
 - (ii) transferred to another vessel, vehicle or aircraft, whether it is or is to be transferred directly between such vessels, vehicles or aircrafts or whether it is to be landed in Hong Kong after its importation and stored, pending exportation;

vessel (船隻) has the meaning given by section 2 of the Merchant Shipping (Local Vessels) Ordinance (Cap. 548).

3. Application

- (1) This Regulation does not apply in relation to any marine light diesel that is—
 - (a) goods in transit;
 - (b) transhipment goods; or
 - (c) solely for export or re-export.
- (2) In a prosecution for an offence under this Regulation, any marine light diesel that is found in Hong Kong is presumed, in

the absence of evidence to the contrary, to be marine light diesel that is not—

- (a) goods in transit;
- (b) transhipment goods; or
- (c) solely for export or re-export.

4. Supply of non-compliant marine light diesel prohibited

- (1) A person commits an offence if the person supplies, or causes to be supplied, any marine light diesel that does not comply with Schedule 1.
- (2) Subsection (1) does not apply if the marine light diesel is supplied to a warship or any other vessel on military service.
- (3) A person who commits an offence under subsection (1) is liable on conviction to a fine at level 5 and to imprisonment for 3 months.

5. Marine light diesel importer to keep records

- (1) A marine light diesel importer must—
 - (a) for each batch of marine light diesel that the importer imports—
 - (i) ensure that the batch is, on receipt by the importer, accompanied by a fuel quality test report complying with section 6(1); and
 - (ii) keep the report during the 3 years after the date of the receipt;
 - (b) for each batch of marine light diesel that the importer supplies or causes to be supplied—
 - (i) cause a fuel quality test report complying with section 6(2) to be issued for that batch before any

- marine light diesel is supplied or caused to be supplied from that batch;
- (ii) assign a reference number to the report; and
 - (iii) keep the report during the 3 years after the date of the test; and
- (c) for each transaction by which marine light diesel is acquired or supplied by the importer—
- (i) ensure that the transaction is evidenced by a document containing the particulars specified in subsection (2); and
 - (ii) keep the document during the 3 years after the date of the transaction.
- (2) The particulars required under subsection (1)(c)(i) are—
- (a) the date of the transaction;
 - (b) the product name of each batch of marine light diesel acquired or supplied, from which the classification of the diesel may be ascertained;
 - (c) the quantity of each batch of marine light diesel acquired or supplied; and
 - (d) in the case of a supply, the name of the person to whom the marine light diesel is supplied.
- (3) A marine light diesel importer must also, on or before the 15th day of each month, submit to the Authority a report containing information regarding each batch of marine light diesel supplied, or caused to be supplied, by the importer in the previous month, in a form specified by the Authority.
- (4) A person who fails without reasonable excuse to comply with subsection (1) commits an offence and is liable on conviction to a fine at level 5 and to imprisonment for 1 month.
- (5) A person commits an offence if the person—

- (a) fails without reasonable excuse to comply with subsection (3); or
 - (b) in purported compliance with subsection (3)—
 - (i) submits a report which contains any information which the person knows to be incorrect or inaccurate in a material respect;
 - (ii) recklessly submits a report which contains any information which is incorrect or inaccurate in a material respect; or
 - (iii) knowingly omits any material information from a report submitted.
- (6) A person who commits an offence under subsection (5) is liable on conviction to a fine at level 5 and to imprisonment for 1 month.

6. Particulars to be contained in fuel quality test reports

- (1) A fuel quality test report under section 5(1)(a)(i) must contain the following particulars—
- (a) the name of the issuer of the report;
 - (b) the date of the test; and
 - (c) the test methods and results of all parameters of the marine light diesel as set out in—
 - (i) the ISO specifications;
 - (ii) the Platts specifications; or
 - (iii) the motor vehicle diesel specifications.
- (2) A fuel quality test report under section 5(1)(b)(i) must contain the following particulars—
- (a) the name of the issuer of the report;
 - (b) the date of the test;

- (c) the reference number of the fuel tank from which the sample is taken;
- (d) the test methods and results of the following parameters of the marine light diesel—
 - (i) density; and
 - (ii) sulphur content; and
- (e) the classification of the marine light diesel.

7. **Marine light diesel supplier to keep records**

- (1) A marine light diesel supplier must for each transaction by which marine light diesel is acquired or supplied by the supplier—
 - (a) ensure that the transaction is evidenced by a document containing the particulars specified in subsection (2); and
 - (b) keep the document during the 3 years after the date of the transaction.
- (2) The particulars required under subsection (1)(a) are—
 - (a) the date of the transaction;
 - (b) the product name of each batch of marine light diesel acquired or supplied, from which the classification of the diesel may be ascertained;
 - (c) the quantity of each batch of marine light diesel acquired or supplied; and
 - (d) in the case of an acquisition, the name of the person from whom the marine light diesel is acquired.
- (3) A person who fails without reasonable excuse to comply with subsection (1) commits an offence and is liable on conviction to a fine at level 5 and to imprisonment for 1 month.

8. **Authority may request records**

- (1) The Authority may, by notice in writing, require any person to submit to the Authority, within the time as specified in the notice, any report, document or other record which the person is required to keep under this Regulation.
- (2) A person commits an offence if the person—
 - (a) fails without reasonable excuse to comply with a notice under subsection (1); or
 - (b) in purported compliance with a notice under subsection (1)—
 - (i) submits a report, document or any other record which contains any information which the person knows to be incorrect or inaccurate in a material respect;
 - (ii) recklessly submits a report, document or any other record which contains any information which is incorrect or inaccurate in a material respect; or
 - (iii) knowingly omits any material information from a report, document or any other record which is submitted.
- (3) A person who commits an offence under subsection (2) is liable on conviction to a fine at level 5 and to imprisonment for 1 month.

9. **Determination of sulphur content of marine light diesel**

For the purposes of this Regulation, the sulphur content of marine light diesel (other than motor vehicle diesel) must be determined in accordance with the test method set out in any of the documents specified in Schedule 2.

Schedule 1

[s. 4]

Specifications of Marine Light Diesel

1. Any marine light diesel must either be—
 - (a) light diesel oil which—
 - (i) complies with the specifications, except for sulphur content—
 - (A) defined for “Category ISO-F-DMA” in the ISO specifications; or
 - (B) defined for “Gasoil 0.05% Sulfur” in the Platts specifications; and
 - (ii) has a sulphur content not exceeding 0.05% by weight; or
 - (b) motor vehicle diesel.
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Schedule 2

[s. 9]

Test Methods for Determining Sulphur Content

1. EN ISO 20884:2011: “Petroleum products—Determination of sulfur content of automotive fuels—Wavelength-dispersive X-ray fluorescence spectrometry” published by the European Committee for Standardization
2. EN ISO 14596:2007: “Petroleum products—Determination of sulfur content—Wavelength-dispersive X-ray fluorescence spectrometry” published by the European Committee for Standardization
3. EN ISO 8754:2003: “Petroleum products—Determination of sulfur content—Energy-dispersive X-ray fluorescence spectrometry” published by the European Committee for Standardization
4. ASTM D7039-13: “Standard Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry” published by the ASTM International
5. ASTM D5453-12: “Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence” published by the ASTM International
6. ASTM D4294-10: “Standard Test Method for Sulfur in

Petroleum and Petroleum Products by Energy Dispersive X-ray Fluorescence Spectrometry” published by the ASTM International

Secretary for the Environment

2014

Explanatory Note

This Regulation provides for the specifications that must be met by marine light diesel (that is, light diesel oil which is intended for use in a vessel) supplied in Hong Kong. It also provides for the requirement on importers and suppliers of marine light diesel to keep records.

2. Sections 1, 2 and 3 are preliminary provisions which provide for the commencement, interpretation and application of this Regulation respectively.
3. Section 4 prohibits the supply of non-compliant marine light diesel in Hong Kong. The specifications for marine light diesel are set out in Schedule 1. In gist, marine light diesel must comply with any of the following 3 sets of specifications—
 - (a) those defined for “Category ISO-F-DMA” in ISO 8217:2012 published by the International Organization for Standardization;
 - (b) those defined for “Gasoil 0.05% Sulfur” in the FOB Singapore gasoil/diesel specifications published by Platts;
 - (c) those specified for motor vehicle diesel in the Air Pollution Control (Motor Vehicle Fuel) Regulation (Cap. 311 sub. leg. L).
4. Nevertheless, for the specifications in paragraph 3(a) and (b), the specification on sulphur content is not applied in this Regulation. Instead, the sulphur content of the marine light diesel concerned must not exceed 0.05% by weight.
5. Section 5 requires a marine light diesel importer (basically a person who carries on a business of importing and supplying marine light diesel) to keep records in respect of the marine light diesel imported or supplied by the importer. Two types of records are required—

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- (a) fuel quality test report regarding the specifications of the marine light diesel; and
 - (b) transaction record regarding the acquisition and supply of the marine light diesel.
6. Section 5 also requires a marine light diesel importer to submit a monthly report to the air pollution control authority setting out information regarding each batch of marine light diesel supplied by the importer in the previous month.
 7. Section 6 sets out the particulars which a fuel quality test report must contain.
 8. Section 7 requires a marine light diesel supplier (basically a person, other than a marine light diesel importer, who carries on a business of supplying marine light diesel) to keep transaction records regarding the acquisition and supply of marine light diesel by the supplier.
 9. Section 8 empowers the air pollution control authority to require by written notice the submission of records required to be kept under this Regulation.
 10. Section 9 and Schedule 2 provide for the test methods for determining the sulphur content of marine light diesel other than motor vehicle diesel.